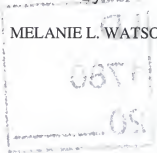


ROLE OF SOCIAL ACADEMIC GOALS IN RELATIONSHIPS
AMONG FIFTH-GRADERS' INTEREST, ACHIEVEMENT GOALS,
AND ACADEMIC OUTCOMES

By

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Abstract of Dissertation Presented to the Graduate School
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Researchers have documented that children's interest in academic subjects declines around the fifth grade. At the same time, recent efforts to expand achievement goal theory have highlighted a need to further the role of social motivation in children's academic endeavors. The purpose of this study was to investigate the hypothesis that, in conditions of low interest, children will use adaptive learning strategies and demonstrate high academic achievement if they have strong social reasons or "goals" for achieving. Because there has been no research on children's social academic goals, a social academic goals scale was developed for this study. In addition, gender differences and relationships among students' interests in mathematics and English, academic goals, learning strategies, and achievement in mathematics and English were also examined.

The study included 181 fifth graders. Thirty-one students had missing data, resulting in a final total of 150 participants. Participants were asked to complete two

surveys: one in mathematics and one in English. Each survey addressed their interests, their achievement goal orientations, and their learning strategies for the subject area. In addition, the participants' fourth and fifth grade scores on the Terra Nova Comprehensive Tests of Basic Skills (TNCTBS) and the Florida Comprehensive Assessment Test (FCAT) were collected from their cumulative records. Students' test scores in English and mathematics obtained in the spring of fourth grade were used to control for prior achievement in the analyses.

The results did not support the hypothesis that social academic goals would be an important source of motivation for students in conditions of low interest. In addition, the findings did not indicate that students' use of learning strategies mediates the relationship between their academic goals and their achievements, as expected. However, the results of this study contributed other valuable information. Among these findings, gender differences in academic goal orientations, the importance of studying social academic goals as a separate category, and the potential academic benefits of multiple goals have particularly significant practical and theoretical implications.

CHAPTER 1 INTRODUCTION

Statement of the Problem

Motivation is an important problem in education today, especially when educators deal with topics of low interest. According to a number of recent studies, children show a marked decline in their interest in academic topics by the middle of their elementary years (Eccles, Wigfield, Flanagan, Miller, Reuman, & Yee, 1989; Eccles, Wigfield, Harold, & Blumenfeld, 1993; Miller & Meece, 1997; Wigfield et al., 1997). These findings are of particular concern to educators because when children are uninterested in a subject, they are less likely to value that subject or to engage and persist at tasks related to the subject (Pintrich & DeGroot, 1990; Wentzel, 1998). Moreover, recent research in reading motivation suggests academic benefits related to interest. Studies have found that interest in reading material leads to the use of adaptive learning strategies (Wigfield, 1997) and to better comprehension in children (de Sousa & Oakhill, 1996), regardless of the difficulty level of the material (Renninger, 1992). Although motivation research has contributed much to our knowledge about children's motivation, surprisingly little work has been conducted on the issue of motivation and low interest topics.

Achievement Goal Theory

Achievement goal theory may offer some insights into this problem. Researchers working within a goal theory framework have focused on children's reasons or purposes

for their behavior in achievement settings. They have conceptualized these reasons as “goals” and viewed them as powerful sources of achievement motivation. For the most part, goal theorists have focused on general and academic reasons for trying to succeed in the classroom (Blumenfeld, 1992; Urdan & Maehr, 1995). In particular, goal theorists have discovered that certain goal-related classroom structures (e.g., task characteristics and evaluation methods) have an important impact on academic outcomes (Ames, 1978, 1981, 1992; Ames & Ames, 1978, 1984; Ames & Archer, 1988; Anderman & Midgley, 1997; Midgley, Anderman, & Hicks, 1995) and have linked students’ personal goal orientations to classroom performance (Dweck & Leggett, 1988; Elliott & Dweck, 1988). The consensus from these studies is that students are primarily influenced by either a mastery-goal orientation (also called task-goal orientation) or a performance-goal orientation (also called ego-goal orientation or ability-goal orientation).

Students with mastery-goal orientations are described as being motivated by a desire to gain knowledge, understanding, and skills. Various findings suggest that mastery-goal oriented students show more desirable academic outcomes (Ames, 1992; Archer, 1994; Blumenfeld, 1992) than students with a performance-goal orientation. For instance, they use more adaptive learning strategies, and, as a result, achieve better grades (Anderman & Young, 1994; Kaplan & Midgley, 1997). In direct contrast, evidence suggests that students influenced by a performance-goal orientation may be motivated more by concerns about their ability such as a desire to avoid failure, outperform their peers, or achieve a good grade; or by social concerns such as a desire to please or impress the teacher or peers. Recently, some researchers further distinguished between two types of performance

goal orientations: performance-approach and performance-avoid goal orientations (Elliot & Church, 1997; Elliot & Harackiewicz, 1996; Midgley, Maehr, Hicks, Roeser, Urdan, Anderman, Kaplan, Arunkumar, & Middleton, 1997). Students with performance-approach orientations are most concerned with demonstrating their competence in academic situations (Midgley et al., 1997). The performance-approach goal orientation has been linked to both positive and negative academic outcomes. Students with performance-avoid goal orientations are most concerned with avoiding looking incompetent in academic situations (Midgley et al., 1997). A performance-avoid goal orientation leads to the use of maladaptive learning strategies and, as a result, undesirable academic outcomes (Anderman & Young, 1994; Kaplan & Midgley, 1997). Research concerning mastery and performance goal orientations has greatly contributed to our understanding that students' learning goals affect their motivation and behavior and ultimately their academic achievement.

Achievement Goal Theory and Social Academic Goals

However, several researchers recently argued that a two-goal theory does not adequately address the diversity and complexity of reasons underlying student motivation (Blumenfeld, 1992; Urdan & Maehr, 1995; Wentzel, 1989). In particular, Urdan and Maehr (1995) suggested that social and ability concerns, the two underlying factors of the performance goal orientation, are broad constructs that are related to different affective, cognitive, and behavioral processes. Instead, they proposed that social reasons for trying to achieve be investigated in a separate category called social academic goals. According to Urdan and Maehr, students often have a number of socially related reasons for trying to

achieve in school. For instance, one student may try to achieve in class because he wants to impress his teacher. Another student may be motivated to try hard because her friends value academic achievement. In previous goal theory research, these social academic goals have been grouped together with ability goals under the general category of performance goal (i.e., social items and ability items have been measured on the same scale: the performance goal scale) and linked to poor academic outcomes. Urdan and Maehr suggested that, when investigated separately from ability goals, students' social academic goals will likely demonstrate a powerful and positive motivational influence on their academic outcomes.

Social Academic Goals and Low Interest Topics

Social academic goals may be a particularly important source of motivation when children lack interest in a subject matter. Several researchers (Blumenfeld, 1992; Chandler & Connell, 1987; Deci, 1992; Deci & Ryan, 1985; Urdan & Maehr, 1995; Wentzel, 1989; Wentzel & Wigfield, 1998) suggested that in conditions of low interest, students may be more motivated by social concerns. For instance, Wentzel (1989) wrote that, "because many classroom tasks are not intrinsically interesting or challenging, compliance to classroom norms and perceived adult expectations for behavior should be especially important motivational factors contributing to academic performance" (p. 132). Deci (1992) suggested that the need for social relatedness becomes the dominant source of motivation for children when they are required to engage in uninteresting but educationally important classroom activities (e.g., learning the multiplication tables). Accordingly, some children will work hard on tedious tasks because they know such effort pleases their

teacher and/or impresses their peers. In sum, researchers have theorized that social academic goals may be a particularly important motivational source in conditions of low interest. However, there has been no empirical investigation of these claims.

Purpose of the Study

The purpose of this study is to investigate the relationship among students' academic goals, their learning strategies, and academic achievement. Specifically, the study is designed (a) to determine whether social academic goals are related to fifth-grade students' learning strategies and academic achievement when students' interest in the academic subject is low and (b) to determine whether learning strategies mediate the relationship between students' goals and their academic achievement. Students may have social academic goals related to both teachers and friends, to teachers only, or to friends only. For this reason, this study is designed to investigate social academic goals for teachers and social academic goals for friends as separate predictors.

I chose to focus exclusively on fifth graders in this study for several reasons. First, academic interest is an important variable in this study. Previous researchers found that, by the fifth grade, children show a general decline in their interest in academic topics (Eccles et al., 1993). Also, if children have developed special interests in academic subject areas, they tend to demonstrate these interests by the fifth grade (Gottfried, 1985; Meece, Blumenfeld, & Hoyle, 1988). Second, the findings of several studies strongly suggested that children's motivational orientations can be assessed with reliability by the fifth grade (Harter, 1981, 1982; Meece et al., 1988; Thorkildsen & Nicholls, 1998). Third, Thorkildsen and Nicholls' (1998) findings suggested that fifth grade may represent an

especially important time in the development of achievement motivation. They found gender differences in several motivational variables with fifth graders that they did not find in previous studies of second graders and adolescents. Other studies (Butler, 1992; Chandler & Connell, 1987; Harter, 1975; Wentzel, 1996a; Wentzel, 1997) also found gender differences in motivation. For these reasons, gender differences are also investigated in this study. In sum, fifth graders are an optimal age group for this study. Previous findings suggest that their academic interests and motivational orientations can be reliably assessed. In addition, the findings of gender differences suggest that fifth grade may be a particularly interesting time for the development of achievement motivation.

Hypotheses

1. Students' task goals, performance-approach goals, and social academic goals are positively related to students' adaptive learning strategies and academic achievement, when prior achievement and gender are controlled.
2. Students' performance-avoid goals are negatively related to students' adaptive learning strategies and academic achievement, when prior achievement and gender are controlled.
3. The relationship between students' goals and academic achievement are mediated by students' learning strategies.
4. Students' interest in the academic subject moderates the relationship between social academic goals and academic achievement, when prior achievement and gender are controlled.

5. Students' interest in the academic subject moderates the relationship between social academic goals and adaptive learning strategies, when prior achievement and gender are controlled.

Theoretical Significance of the Study

The findings of this study may help to expand achievement goal theory by addressing two important theoretical issues. First, researchers working within the goal theory framework have theorized that social concerns may be a significant source of motivation in the event that children lack interest in an academic subject. However, despite these theoretical claims, researchers have not investigated the impact of social concerns on motivation separate from the impact of ability concerns. In part, the lack of research may be explained by the limitations of a two-goal theory (Urdu & Maehr, 1995). Urdu and Maehr argued that social goals need to be separated from ability goals in the performance goal construct. According to them, social concerns and ability concerns lead to different affective, cognitive, and behavioral outcomes and, therefore, their relationship to academic outcomes should be separately investigated. This study is designed to examine social academic goals in a separate category apart from ability goals and to investigate the relationship between social academic goals and academic outcomes. In short, the results of the study may contribute to efforts to refine the performance goal construct by determining whether social academic goals as a separate goal construct have a positive effect on students' motivation and academic achievement in conditions of low interest.

Second, the findings of this study may offer some insights into the relationship between domain specific interest (interest in a particular academic subject) and motivational

orientation toward that subject. The results of research on interest (Wentzel, 1998; Wigfield, 1997) suggest that interest in a particular subject leads to greater persistence, engagement, and the use of adaptive learning strategies in tasks related to that subject. Similarly, mastery-goal oriented students are generally described as showing greater persistence, engagement, and the use of adaptive strategies in achievement settings than performance-oriented students. It may be that interest leads to the development of a mastery goal orientation toward a specific academic domain (Alexander, 1997). In any case, the findings of this study may offer some insights into the relationship between domain-specific interest and goal orientations.

Practical Significance of the Study

The findings of this study may help teachers to better understand how to motivate children when their interest is lacking. With a few exceptions (Urdan & Maehr, 1995; Wentzel, 1989; Wentzel, 1991; Wentzel, 1993; Wentzel, 1998), achievement goal theorists have primarily approached motivation as an individual characteristic or a reaction to classroom structures (i.e., tasks and/or evaluation methods). The results of this study may suggest to teachers that motivation also develops “out of the continuing relations between individual students and others in their social contexts” (Goodenow, 1993, p. 40). Teachers may apply this knowledge to their instructional strategies in efforts to better engage students in topics of low interest.

CHAPTER 2 REVIEW OF LITERATURE

Introduction

Researchers have documented a decline in children's interest in English and math that occurs around the fifth grade (Eccles, Adler, Futterman, Goff, Kaczala, Meece, & Midgley, 1983). At the same time, the findings of several studies (Pintrich & De Groot, 1990; Schiefele, 1991; Schiefele & Csikszentmihalyi, 1994) link interest in subject matter to academic benefits, including greater engagement, persistence, and higher levels of academic performance. Achievement goal theory may provide a useful framework for conceptualizing this problem, particularly in light of recent efforts to investigate the role of social motivation in children's formation of achievement goals (Urdan & Maehr, 1995; Wentzel, 1997, 1998, 1999, 2000).

Interest

In the research literature, interest has been variously described as an individual's relationship with a specific subject area or activity (Schiefele, 1991; Schiefele & Csikszentmihalyi, 1994) or "an affect that occurs in the interaction between a person and an activity" (Deci, 1992, p. 46). Hidi (2000) noted that most interest researchers conceptualize interest as a psychological state or an individual disposition. According to her, interest is best described as "an individual's relatively enduring predisposition to attend to certain objects, stimuli, and events" (Hidi, 2000, p. 313).

Declining Interest

Eccles and her colleagues (Eccles et al., 1983) conducted extensive research designed to explore children's declining interest in academic subjects. However, rather than focus on interest alone, they used a construct called subjective task value that includes four components: interest in, perceived importance of, perceived usefulness of, and cost of engaging in the activity. As a whole, the research suggests that children's interest in English begins to decline before the fifth grade but that their interest in math declines later, around the fifth and sixth grades. These findings concern educators because of the academic benefits associated with interest in a subject area.

In the first year of a 3-year cross-sequential study, Eccles et al. (1993) found a decline in children's subjective task values in the areas of reading and music in the early to middle elementary school years (i.e., 3 cohorts of first-, second-, and fourth-graders) but no changes in their values in the area of math. In the second year of their study, Eccles et al. (1993) collected data on children's subjective task values related to reading, math, music, and sports. They found that children's subjective task values in the areas of reading and music declined from the first to the fourth grades but found no changes in their task values related to math. Children's subjective task values attached to sports increased over the same period. Overall, the children valued reading and math much less than sports. Some interesting, albeit stereotypical, gender differences were noted. For instance, across the grades, the girls valued reading and music more than the boys did. In contrast, the boys valued sports more than the girls did. Of particular relevance to the current study, both

girls' and boys' subjective values related to reading and music declined from the first to the fourth grade.

In the third year of that study (Eccles et al., 1993), Eccles and her colleagues (Wigfield et al., 1997), surveyed the same group of children who were, by then, third-, fourth-, and sixth-graders. Again, the children showed a significant decline in their interest in reading and music from the first to sixth grade. However, the decline in reading interest appeared to stop at fourth grade. In addition, their interest in math varied depending on the cohort. The youngest group showed little change in their interest in math over the 3-year period, the second cohort showed an increase, and the oldest cohort (now in sixth grade) showed a decrease in their math interest over time. All of the groups showed the greatest interest in sports. The results showed similar gender differences (i.e., consistent with Eccles et al., 1993) with one notable exception. Over the entire 3-year period, no significant differences were found in boys' and girls' interest in math. In short, the findings suggest that interest in English declines by the middle elementary school years and interest in math declines later, at the end of elementary school.

Earlier studies of older students further document the decline in children's interest in math in their late elementary and early middle school years. For instance, in a study of 5th- to 12th-grade students that specifically focused on attitudes towards math, Eccles et al. (1983) found that interest in math steadily declined with age. The results also indicated that children grew more pessimistic and negative about math and liked their math teachers less as they grew older.

Similarly, Eccles et al. (1989) also discovered a decline in the perceived importance of math among sixth and seventh graders. They followed a large group (around 1,450) of students over a 2-year period. In the fall and spring of each school year, the students were asked to complete a questionnaire that was designed to measure their beliefs regarding the importance of being successful at mathematics, English, sports, and social activities. Overall, students rated competence in social skills as most important, followed by competence in mathematics, English, and last, sports. Over the 2 years, the students' ratings of these domains revealed some interesting patterns. For instance, the students' ratings of the importance of English were significantly lower than their ratings of the importance of mathematics in the sixth grade. However, the ratings of the importance of math steadily declined over the two school years. By the seventh grade, students' ratings of mathematics were nearly as low as their ratings of English. Interestingly, their ratings of English were consistently lower at the start of each year but recovered some by the end of the school year. In conclusion, Eccles et al. (1989) were unable to explain the pattern of the English ratings. They did, however, suggest that the pattern in mathematics ratings supports an environmental explanation. That is, the decline in the perceived importance of math is linked to changes in the way that math is taught in junior high schools. In sum, both studies show the decline in interest in math in the late elementary and early middle school years.

Interest and Academic Benefits

These findings are particularly troubling because there are academic benefits associated with interest, including greater engagement, persistence, and goal-setting. For instance,

Pintrich and De Groot (1990) surveyed a large group of seventh graders ($n=173$) from science and English classes about strategy use and explored several motivational variables that affect academic performance, including interest in subject matter. They found that the more interest the children had in a particular subject matter, the more cognitively engaged they were. In addition, when children were interested in the subject, they were more likely to be self-regulating and persistent in their work. Self-regulation, in turn, predicted higher levels of academic performance (as measured by the children's grades on seatwork, exams, quizzes, essays, and reports) across all measured tasks. The researchers concluded that interest plays a critical, central role in an individual's decision to become engaged in academic work, in the first place.

Similarly, Wentzel (1998) conducted research that linked several variables, including interest in school and interest in class, with academic achievement. Children's interest in school was measured by a self-report questionnaire and interest in class was measured by teacher's ratings of perceived student interest and students' self-ratings of attention and effort in class. The results indicated that the greater the students' interest in school and class, the higher their grades 1 year later. Furthermore, this significant effect was more pronounced for the girls than for the boys. Overall, the findings were consistent with other studies that document academic benefits related to interest.

Academic benefits of interest have also been found in older students. Scheifele (1991) conducted several studies that examined the role of interest in text comprehension and recall of male college students. In the first study, students completed a questionnaire designed to measure their level of interest in a particular topic and were assigned to either

a high or low interest group based on their responses. Afterward, they were instructed to read a five-page passage from their psychology textbooks and, then, complete a questionnaire that posed both simple and complex questions. The results suggested that the higher the students' interest in the topic, the deeper their comprehension of the text (i.e., the better their performance on the complex questions), when prior knowledge and intelligence were controlled. In the second study, male college students were asked to recall the text in its entirety. The students with greater interest in the topic tended to have greater recall of information that required deeper processing (e.g., the main idea, inferences) than students with low interest. Scheifele (1991) also studied the relationship between interest and learning strategies in college students and found that students with greater interest in a topic used strategies that required deeper processing (e.g., elaboration and information-seeking). All in all, Scheifele's studies (1991) suggest that interest has a highly positive influence on academic performance.

Scheifele also collaborated with Csikszentmihalyi (Schiefele & Csikszentmihalyi, 1995) on research that explored the relationship between interest and the subjective experience of academic work. For instance, they found that interest in math is significantly related to alertness, enjoyment, and self-esteem in high school students. An earlier study with college students (Schiefele & Csikszentmihalyi, 1994) also found that interest is a significant predictor of a positive emotional experience with academic material. In addition, findings from the same study (Schiefele & Csikszentmihalyi, 1994) suggested that interest is a reliable predictor of grades in mathematics, biology, and history. Interestingly, the researchers did not find that interest predicts grades in English, which they attributed

to the lack of variance in their sample's English grades (i.e., 80% percent of the sample received As or Bs and 2% of the sample received Ds and Fs).

Summary

To summarize, there is considerable evidence that, as children proceed through their elementary school years, they steadily lose interest in English and math. Overall, the decline in interest occurs slightly earlier for English (by the fifth grade) than for math (fifth and sixth grades). Furthermore, researchers have not found overall significant gender differences in this general loss of interest in either subject area. Academic benefits associated with interest include greater engagement in subject matter, persistence, effective learning strategies, and higher grades.

Achievement Goal Theory

Achievement goal theory may offer some insights into the problem of children's declining interest by providing a theoretical framework for conceptualizing children's motivation. Some goal theorists (Ames, 1978, 1981; Ames & Archer, 1988; Anderman & Midgely, 1997; Anderman & Young, 1994; Midgley et al., 1995) have focused on identifying structures in the classroom that lead to the adoption of either mastery or performance goals, including evaluation methods and task characteristics. Other researchers (Diener & Dweck, 1978, 1980; Dweck & Leggett, 1988; Elliott & Dweck, 1988) working within an achievement goal framework have been interested in the relationship between personal goal orientations and academic behavior. Among the goal theorists, the majority support the view that individual behavior in an achievement setting is influenced by a dominant achievement goal orientation. That is, students tend to adopt

either a mastery-goal orientation or a performance-goal orientation. The following summary of research conducted within a goal theory framework reveals this focus on these two contrasting goal orientations, and findings that suggest that only a mastery-goal orientation can lead to positive academic outcomes.

Goal-Related Structures in the Classroom

Carole Ames conducted extensive research on the effects of certain goal-related structures in the classroom on children's achievement motivation. In her early research (Ames 1978, 1981), she examined the negative outcomes of competitive (versus cooperative) reward structures on children's self-concepts and achievement attributions. She defined a competitive reward structure as a situation wherein the student must compete with other students to be successful and a cooperative reward structure as a situation in which the student's success is noncontingent upon another's failure. Although she did not use goal theory terminology in this early research, she later referred to competitive reward structures as a source of a performance-goal orientation because, as a type of evaluation, competition emphasizes social comparison (Ames, 1992). Furthermore, she linked competitive reward structures to negative academic outcomes.

In one study with fifth graders, Ames (1978) found that children with a high self-concept had stronger emotional reactions to success and failure in competitive settings than children with a low self-concept. For instance, when they succeeded, they tended to give themselves higher ratings (for ability and skillfulness) and, after failure, they tended to rate themselves lower than did children with a low self-concept. Ames (1981) found a similar negative effect from competitive situations in a subsequent study of the attributions

of fifth- and sixth- grade students. The results from this study suggested that, in competitive settings, children who performed well gave themselves higher ratings of ability and deservingness (of a reward) when they succeeded than children who did not perform well. When children in competitive settings did not perform well, they attributed greater ability to other more successful children. In contrast, in cooperative settings, both high- and low-performing children tended to attribute greater ability to themselves upon success. In conclusion, Ames emphasized that reward structures have a powerful impact on children's self-perceptions in achievement settings. Moreover, a competitive reward structure tends to have a negative influence on children's self-concepts and attributions (especially on children with high self-concepts or children who perform well or both).

Anderman and Young (1994) found that the use of specific instructional practices in science class contributed to a competitive classroom environment and, in turn, to students' adoption of performance goals. They administered the Pattern of Adaptive Learning Survey (PALS) to a large sample of sixth- and seventh-grade students and science teachers in a large midwestern city. As described in the methods chapter of the current study, the PALS has been used extensively in motivation research to assess students' reasons for achieving in the classroom. It also is designed to assess teachers' instructional practices and beliefs about learning and teaching. The results of the survey suggested that when teachers use certain competitive practices (e.g., using high-achieving students as models by displaying their work), students tend to have lower levels of mastery goals. In short, goal-related structures in the classroom, such as evaluation methods and instructional practices, are related to the development of students' goal orientations.

Perceptions of Goal-Related Structures in the Classroom and Schoolwide

In a later study, Ames and Archer (1988) examined the influence of students' perceptions of the classroom motivational orientation on their academic behavior. Specifically, they investigated two questions: If students perceived that performance goals were emphasized in their classroom, how did that perception affect their learning strategies, task choices, attitudes, and attributions and, how did a perception of a classroom emphasis on mastery-goals influence students' behavior? They surveyed 176 girls and boys in 8th through 11th grades who attended a school for academically advanced students. Their findings were consistent with those of other studies that suggest the mastery goal orientation is preferable. Students who perceived an emphasis on mastery goals in their classroom used more learning strategies, chose more challenging tasks, and, overall, exhibited a more positive attitude toward their class. On the other hand, students who perceived an emphasis on performance goals in their classrooms did not use fewer learning strategies nor did they choose less challenging tasks on the average. However, they did have a more negative attitude toward their class and tended to more often attribute their failures to ability. Once again, this study produced findings that link the mastery-goal orientation to better academic outcomes than the performance-goal orientation.

Several studies indicated that middle-school teachers and students perceive their environment to be more performance-goal oriented than do elementary school students and teachers (see Midgley, 1993, for a review). For instance, Midgley et al. (1995) surveyed both teachers and students in two elementary and two middle schools. The

teachers were asked a variety of questions aimed at assessing their goals for their students, perceptions of school culture and their teaching efficacy, and their beliefs about whether ability is fixed or modifiable. Students were asked similar questions regarding their personal goal orientations, their efficacy and ability beliefs, and their perceptions of school culture. Midgley and her colleagues predicted that middle school teachers and students would endorse fewer task (mastery) goals, perceive their school culture to be more performance-goal oriented, and have a lower sense of teaching efficacy than elementary school teachers and students. In addition, at the middle school level, they expected to find, among both the students and the teachers, a belief that ability is fixed and, at the elementary school level, a belief that ability is modifiable.

Indeed, they found that the results confirmed most of their predictions. For instance, middle school teachers and students perceived their school culture to be more performance-oriented and endorsed fewer task goals than did the elementary-school teachers and students. In addition, middle-school teachers, but not students, had a stronger belief that ability is fixed and felt less efficacious than elementary-school teachers. Overall, middle-school students reported feelings of greater efficacy than elementary-school students. However, among students and teachers of both middle- and elementary-school age, the stronger the perception that the school emphasized task goals, the greater their feelings of self-efficacy.

In related research, Anderman and Midgley (1997) focused on students in transition from elementary school to middle school and predicted that as students moved into middle school, they would perceive a greater classroom-wide emphasis on performance goals,

exhibit a more performance-goal orientation to achieving, and, as a result, show a decline in their perceived academic competence. Unlike previous studies that typically took a general rather than a domain-specific approach to motivation, these researchers asked the students separate questions about English and math, specifically regarding their perceptions, goals, and beliefs related to each subject matter.

The results of a survey administered to the same group of students in the fifth grade (last year of elementary school) and sixth grade (first year of middle school) supported their predictions. Overall, students perceived a decline in emphasis on task goals across both domains in the sixth grade. Moreover, students adopted fewer task goals in middle school. In addition, they reported lower perceptions of academic competence after the transition to sixth grade. Furthermore, no domain differences were found across all variables. Similar to Ames' findings (1981) that high-performing students experienced a negative effect from a competitive environment, Anderman and Midgley (1997) found that children with high ability tended to report the greatest decline in perceived academic competence after the transition to middle school. They concluded that this effect is due to not only the more competitive evaluation methods in middle school, but also to different demands placed on the students, particularly in types of tasks and peer relationships. In sum, they found that students perceive a greater emphasis on performance goals in middle school, adopt fewer task goals, and show a decline in their perceived academic competence and that these effects are similar for English and math.

Personal Goal Orientations and Academic Behavior

Rather than focus on external sources of goal orientations, Dweck and her colleagues (Diener & Dweck, 1978, 1981; Dweck & Leggett, 1988; Elliott & Dweck, 1988) explored the relationship between personal goal orientations and patterns of adaptive and maladaptive behavior. For instance, Dweck and Leggett (1988) theorized that the pursuit of different goals underlies the differences between the helpless and mastery-oriented patterns. Students with a "helpless pattern" avoid challenging situations that bring the potential for failure because they are mainly focused on protecting their self-image. Instead, they focus on tasks and situations in which there is some certainty of success. In contrast, individuals who display a mastery-oriented pattern gravitate towards challenging tasks and situations in order to provide themselves with opportunities to grow. According to Dweck and Leggett, when students confront failure, those who pursue performance goals experience certain cognitions, affect, and, ultimately, behavior that can be characterized as a helpless pattern. Conversely, the students who pursue mastery goals in response to failure experience cognitions, affect, and, ultimately, behaviors that can be characterized as a mastery-oriented pattern .

Dweck and Leggett (1988) based their ideas on a series of studies conducted by Diener and Dweck (1978, 1980). Overall, the findings from these studies suggested that these two behavior patterns, helpless and mastery, lead to very different experiences of failure. Working with students in the upper elementary grades, Diener and Dweck (1978, 1980) first identified the patterns based on children's responses to an attributional measure. They then instructed them to solve 12 problems, the last four of which were designed for

individuals well above their age level (i.e., the tasks offered opportunity for failure). Finally, the researchers monitored the children's level of strategy use by asking them to talk aloud as they worked on the sixth problem. Diener and Dweck found no differences between children identified as helpless and mastery-oriented in terms of their strategy use or verbalizations about other issues while they were working on successful problems. However, when the children failed to solve the last four problems, striking differences emerged. The children with the helpless pattern expressed boredom, anxiety, and aversion to the task and displayed attempts to preserve their self-image (e.g., bragging about other talents and possessions). In comparison to the mastery-oriented children, they showed a much lower use of strategies and performed more poorly on these problems. They also perceived their failure as a reflection of their low ability.

In contrast, children with a mastery-orientation welcomed the challenge of the difficult problems and were optimistic about their eventual success. They engaged in self-monitoring and self-instruction directed not only at solving the problem, but also at motivating themselves. Finally, the majority of mastery-oriented students maintained a high level of strategies, with some even increasing their level by developing new and more effective strategies. In short, when faced with potential failure, the children with a helpless orientation engaged in behaviors that limited their learning. They immediately set to work preserving their self-image. The children with a mastery orientation engaged in behaviors that enabled them to gain more knowledge and skill. In conclusion, Dweck and Leggett (1988) suggested that the pursuit of performance or mastery goals leads to varying

responses to failure and, ultimately, to either an adaptive (mastery-oriented) behavior pattern or a maladaptive (helpless) behavior pattern.

Summary

In sum, research within an achievement goal theory framework has traditionally reflected two directions; some researchers have primarily focused on goal-related structures that contribute to the formation of achievement goals (Ames, 1978, 1981; Ames & Archer, 1988; Anderman & Midgley, 1997; Anderman & Young, 1994; Midgley et al., 1995). Other researchers have approached achievement goals as internal characteristics or personal goal orientations and focused on related adaptive and maladaptive behavior patterns (Diener & Dweck, 1978, 1981; Dweck & Leggett, 1988; Elliott & Dweck, 1988). Both strands of research are centered on contrasting two goal orientations and emphasize that only a mastery-goal orientation leads to positive academic outcomes.

Expanding Goal Theory

Research designed to explore the role of perceived academic competence in the relationship between achievement goals and academic outcomes resulted in expanding goal theory. In particular, some researchers (Elliott & Dweck, 1988) found different academic outcomes for individuals with a performance-goal orientation depending on their perceived level of academic competence. Other researchers found less conclusive findings (Kaplan & Midgley, 1997). However, as a result of their studies, both groups of researchers supported a distinction between two types of performance goals: performance-approach and performance-avoid. Recently, Midgley, Kaplan, and Middleton (2001) considered the need to reconceptualize goal theory in view of findings linking

performance-approach goals with academic benefits but concluded that the evidence does not support a reconceptualization.

Role of Perceived Ability/Academic Competence

Elliott and Dweck (1988) designed a study to experimentally test whether perceived ability moderates the relationship between achievement goals and behavior patterns in fifth graders. In this study, the researchers induced a personal goal orientation in one condition by emphasizing that performances would be filmed and a mastery goal orientation in the other condition by stressing how well learning will help with later studies. In addition, they manipulated ability perceptions by providing the students with feedback on a pretest. The researchers predicted that performance-goal oriented individuals with perceptions of high ability would actually display mastery-oriented behaviors. That is, they would be interested in displaying their ability and, therefore, would be drawn to tasks with a moderate degree of difficulty, use a high level of strategies, and demonstrate effectiveness. On the other hand, performance-goal minded individuals with low perceptions of ability would show behaviors more characteristic of a helpless pattern, including choosing easy tasks, and emotionally and cognitively deteriorating when faced with failure. Mastery-goal oriented individuals with both high and low perceptions of ability would display typical mastery-oriented behaviors. Comparing four experimental groups (high ability/mastery-oriented, low ability/mastery-oriented, high ability/performance-oriented, and low ability/performance-oriented), the researchers looked for differences in students' task-choices, strategy use, and verbalizations (i.e., while working on a task).

For the most part, the results confirmed their predictions. Regarding task choice, students were clearly influenced by both their type of goal orientation and their perception of ability. For instance, students in the mastery-goal condition more often chose the learning task than did students in the performance goal condition. In addition, a significant number of students in the performance-oriented group who had received the least favorable feedback on the pretest (i.e., the low ability condition) chose the easiest task. On the other hand, students who had received the most favorable feedback on the pretest, regardless of goal orientation, more often chose the most difficult task rather than the moderate and easy tasks. With regard to strategy use, no significant differences among the groups were found. However, significant differences in the content of verbalizations were found among the groups. For instance, in the low ability/performance-oriented group, students were more likely to express negative feelings and to attribute their failure to an uncontrollable cause than students in any of the other groups. In contrast, the high ability/performance-oriented and both mastery-oriented groups did not display negative affect or attributions of failure. In sum, the study showed that children are profoundly influenced by their goal orientation but that the influence is moderated by their confidence level. In addition, the results suggest that for children who have positive perceptions of their ability, a performance-goal orientation does not always lead to negative academic outcomes.

In a similar study, Kaplan and Midgley (1997) asked seventh graders about their goals, perceived academic competence, and their learning strategies in English and in math class (using the PALS) and found that perceived academic competence did not moderate the

relationship between performance goals and academic behavior. In contrast to Elliott and Dweck's (1988) results, they found that performance-oriented students with high perceived academic competence did not use more adaptive learning strategies than performance-oriented students with low perceived academic competence in both English and math classes. Also, in contrast to Elliott and Dweck's study (1988), Kaplan and Midgley found that perceived academic competence moderated the relationship between mastery goals and the use of adaptive and maladaptive learning strategies. Mastery-oriented students with high perceived academic competence used a greater number of adaptive learning strategies and fewer maladaptive learning strategies than did mastery-oriented students with low-perceived academic competence. Kaplan and Midgley suggested that these inconsistent findings may be due to the heavy emphasis placed on performance-goal like structures (e.g., ability grouping, normative evaluation) in the schools from which their sample was drawn. That is, mastery-oriented students in an environment that is designed to promote a performance orientation may be more likely to be influenced by their level of perceived competence.

Performance-Approach and Performance-Avoid Goals

Partly in response to such inconsistent findings, Elliot and Harackiewicz (1996) proposed that the performance goal orientation be divided into two types of goal orientation: performance-approach and performance-avoid. Citing researchers' tendency to treat both mastery and performance goals as "approach" goals (i.e., directing behavior forward in the achievement setting to attain either knowledge or praise), they pointed out the need to account for fear of failure (i.e., avoidance) in the achievement setting. They

suggested that performance-approach goals derive from the need to demonstrate competence in an achievement setting and, therefore, lead to positive academic behavior. Conversely, performance-avoid goals are grounded in the need to avoid looking incompetent and, as such, result in undesirable outcomes.

Elliot and Harackiewicz (1996) tested these predictions in a study with college undergraduates, assigning each student to one of four conditions: mastery, performance-approach, performance-avoid, or performance-neutral condition. The researchers asked the students to complete a puzzle and manipulated their goal orientation by either highlighting success or failure (in the performance conditions) or by emphasizing accomplishment (mastery condition). They expected to find that students with performance-approach goals would become pleasantly involved with the task at hand (in their effort to demonstrate their ability to succeed with the puzzles) and, thus, display intrinsic motivation. In contrast, students with performance-avoid goals, in their efforts to avoid failure, would experience cognitive behavior that interfered with task involvement (e.g., anxiety, mind wandering) and have little or no intrinsic motivation in the end. Intrinsic motivation was measured by a questionnaire designed to assess the students' enjoyment of the task. The results were consistent with the predictions. That is, the students in the performance-avoid condition were the only participants who reported a lack of intrinsic motivation. Students in the performance-neutral condition displayed levels of intrinsic motivation that were halfway between those of the students in the other performance-goal conditions. A replication study resulted in similar findings. The

researchers concluded that the evidence strongly supported the need to distinguish between performance-approach and performance-avoid goals.

Perceived Competence and Performance-Approach/Performance-Avoid Goals

Building on this study, Elliot and Church (1997) explored the role of perceived competence using mastery, performance-approach, and performance-avoid goal orientations. In contrast to other studies (Elliott & Dweck, 1988; Kaplan & Midgley, 1997), their study treated perceived competence as an antecedent to the adoption of achievement goals, rather than a moderator of the effects of goals on academic behavior. In particular, Elliot and Church predicted that individuals with high perceived competence would be drawn to the potential for success and, thus, adopt approach goals (mastery or performance-approach). Those success-driven individuals who harbored a fear of failure would be more likely to adopt performance-approach goals rather than mastery goals. On the other hand, individuals who fear failure and have low self-confidence would be oriented to performance-avoid goals. In their study of college students, they looked at the relationship between goal orientation and intrinsic motivation as well as the relationship between goal orientation and grades. Among their predictions, they expected that a performance-approach orientation would have little effect on intrinsic motivation, given the fear of failure that accompanies such an orientation but would be positively related to grades. They predicted that performance-avoid orientation would have a negative effect on both variables.

The results of the study confirmed the predictions: individuals with mastery or performance-approach goal orientations displayed high perceived competence, whereas

those with performance-avoid orientations had low perceived competence. In addition, factor analyses suggested that performance-approach goals are based on both achievement motivation and the fear of failure and performance-avoid goals are grounded in the fear of failure only. As predicted, performance-approach goals were found to have no effect on intrinsic motivation but a positive relationship with grades. Performance-avoid goals negatively influenced both intrinsic motivation and grades. In conclusion, Elliot and Church again emphasized the importance of distinguishing between performance-approach and performance-avoid goals.

In view of findings that linked performance-approach goals with positive academic benefits (Elliot & Church, 1997; Elliot & Harackiewicz, 1996), Midgley et al. (2001) considered the need to reconceptualize goal theory. In their review, they noted that, in addition to findings relating performance-approach goals to positive outcomes, several studies found either no relationship or a negative relationship between performance goals and academic benefits. In addition, the researchers cited findings that suggest a relationship between performance goals and negative academic outcomes, such as avoidance behaviors, cheating, and less cooperation among peers. In the end, they concluded that the evidence does not support a reconceptualization of goal theory.

Summary

To summarize, early research findings (Elliott & Dweck, 1988) suggested that perceived competence moderated the relationship between achievement goals and academic behaviors, leading to different outcomes for performance-oriented individuals. Later research yielded inconsistent findings (Kaplan & Midgley, 1997). Other researchers

(Elliot & Church, 1997) argued that perceived competence is an antecedent to goal orientation (rather than a moderator of the relationship between goal orientation and academic outcomes) and demonstrated the need to differentiate between a performance-approach and a performance-avoid goal orientation. Although performance-approach goals have been linked to academic benefits, Midgley et al. (2001) argued that the evidence does not sufficiently support a reconceptualization of goal theory.

Achievement Goal Theory and Social Motivation

In further efforts to expand goal theory, several researchers have argued that achievement goal theory does not adequately address the role of social relationships in achievement motivation (Blumenfeld, 1992; Urdan & Maehr, 1995; Wentzel, 1989). A growing number of researchers (e.g., Birch & Ladd, 1996, Connell & Wellborn, 1991, Dweck, 1996, Goldstein, 1999, Harter, 1996) have documented the powerful role of social factors in cognitive development, school adjustment, and motivation. Kathryn Wentzel (2000) has long argued that models of achievement motivation have overlooked children's needs for social competence. In an extensive body of research, she demonstrated a convincing relationship between children's pursuit of social goals and academic motivation. Urdan and Maehr (1995) pointed out that measures of performance goals confound social motivation and ability concerns. Instead, they suggested that social and ability concerns (the two underlying factors of the performance-goal orientation) are broad constructs that lead to different cognitive, affective, and behavioral processes and proposed that social reasons for trying to achieve be investigated separately under a category called social academic goals (p. 218).

Role of Social Relationships in the School Context

Several motivation researchers have focused on fundamental social needs in their work, specifically identifying these needs as powerful sources of motivation. For instance, Deci, Vallerand, Pelletier, and Ryan (1991) proposed that three needs drive most human activity: the need for feeling competent, related, and autonomous. Furthermore, they argued that social environments that support these needs promote and enhance motivation. Connell and Wellborn (1991) also used this theoretical framework and stressed the need for more research on the relationship between an experience of relatedness and motivation in the school setting. In a similar vein, Baumeister (1995) proposed that the need for belongingness is a very basic and powerful source of motivation. All of the researchers pointed out the significant role of social influences on motivation.

Recently, Goldstein (1999) suggested that the teacher-student relationship is an underexplored source of motivation with particular relevance to Vygotsky's theories. To begin with, she argued that the affective aspects of the teacher-student relationship determine the shape and direction of the zone of proximal development. The concept of intersubjectivity, the process through which the teacher and student interact for the purpose of learning, presupposes that some kind of connection between the teacher and student be formed. In addition, scaffolding, another concept central to Vygotsky's theories, typically involves many teacher-directed activities designed to influence the student's affective stance, including activities to engage the student's interest and help control the student's frustration level. Finally, Goldstein argued that both teachers and

students get their motivation in a learning situation from their human desire to enter into a relationship with each other. Children are strongly motivated by their love for and desire to gain approval from adults and the instructional relationship is mutually rewarding on both intellectual and emotional levels.

Other researchers have provided further evidence to support the important role of social sources of motivation. For instance, in an article summarizing her work in this area, Harter (1996) presented evidence that teachers and classmates influence children's perceived competence which, in turn, affects their level of motivation in the classroom. In a study of kindergarteners, Ladd (1990) demonstrated that children who formed friendships in the classroom by the second month of school performed better academically and had more positive school attitudes than children who did not form friendships. Berndt and his colleagues (Berndt, 1999; Berndt & Keefe, 1995) studied junior high school students and discovered that friends tend to become more like each other, regardless of their positive or negative adjustment to school. In other words, friends are not always a negative influence in junior high school, as the research has typically suggested.

Dweck (1996) discussed a variety of social goals that a child may be attempting to achieve at any one time in the school setting. For instance, a child may be seeking liking and approval from others and attempting to develop and promote relationships. He or she may also be striving to control or dominate others or achieve personal pleasure ("hedonistic goals"). Dweck emphasized the need to recognize that social and academic goals are not easily separated and often are bidirectional. That is, when a child is driven by academic goals, he or she directly influences the approval level of the adults and peers

around her. In turn, a child with successful peer and adult relationships is likely to be more engaged and more successful in school than a child with little or no social connections. Other researchers (Ford, 1996; Skinner & Belmont, 1993; Wentzel, 1996a) also stressed the reciprocal effects of social and academic goals.

Social Goals and Academic Motivation

A goal theory framework has guided Wentzel's approach to the role of social factors in motivation (Wentzel, 1989, 1991, 1993, 1996a, 1996b, 1998). In her early work, Wentzel (1991) argued that the need for social competence had been largely ignored in the achievement goal theory research and that, in addition to academic goals, children are also striving to attain various social goals as they move through school. Wentzel (2000) defined a goal as "a cognitive representation of what it is an individual is trying to achieve in a given situation" (pp. 105-106). In the case of a social goal, an individual makes a cognitive representation that contains social content. For example, Wentzel described such goals as seeking to gain approval from others or striving to cooperate with classmates as "social responsibility goals." According to Wentzel, social goals may be personal and internal to the individual or evoked by a particular context or setting. Like other researchers working within a goal theory framework, she views goals as serving primarily to influence behavior in an achievement setting towards a specific outcome. However, unlike academic goal orientations that explain why students try to achieve, Wentzel's social goals describe what students try to achieve in a given setting (Wentzel, 1996a, p. 393; Wentzel, 2000, p. 106). Over the years, Wentzel has increasingly focused on the relationship between social goals and academic motivation (Wentzel, 1996a, 1996b, 1997)

and raised important questions about the relationship between social and academic goals (Wentzel, 1998, 1999, 2000).

In one of her earlier studies, Wentzel (1991) examined the relationship between three aspects of social competence and academic performance in sixth and seventh graders. Specifically, she related socially responsible behavior (i.e., adherence to rules and role expectations, including cooperation, respect for others, and positive interaction in groups), peer status, and self-regulatory processes (i.e., goal setting, interpersonal trust, and problem-solving styles) with grade point average. Her results suggested that all three aspects of social competence are significantly related to grade point average. However, she also found that socially responsible behavior mediates the relationship between grade point average, peer status, and self-regulatory processes. In conclusion, Wentzel suggested that socially irresponsible behavior may reflect low levels of interpersonal trust or emotionally explosive problem-solving styles, or both, which, in turn, have negative effects on academic performance.

In a later longitudinal study, Wentzel (1996) examined how social goals and academic motivation are related to effort and engagement in English class among a group of students as they moved through the sixth, seventh, and eighth grades. In particular, she focused on such prosocial and socially responsible goals as striving to cooperate with teachers and peers, and striving to comply with classroom rules and expectations for behavior. In addition, she examined three aspects of academic motivation, including academic goal orientations, reading self-efficacy, and intrinsic valuing (i.e., perceived importance of) for reading. The results indicated that social goal pursuit was the only

independent predictor of effort for English class in sixth grade and over time. Mastery goal orientations predicted long-term engagement in English. Surprisingly, intrinsic value of reading was not a predictor of effort. In conclusion, Wentzel suggested that interest (i.e., intrinsic valuing) in being socially engaged in the classroom is very likely more motivating than interest in a particular subject. In addition, she recommended further study of contextual factors that might promote the pursuit of social goals.

In a subsequent study of a group of students from her longitudinal study (sixth through eighth grade), Wentzel (1997) suggested that when students perceive that a teacher cares, they may be more likely to pursue social goals and be more motivated in their academic work. Given the possibility that other variables may explain the relationship between perceptions of a caring teacher and social and academic motivation, Wentzel controlled for psychological distress (i.e., anxiety, depression, and low well-being) and internal control beliefs (i.e., attributing success to self, powerful others, or unknown sources). She controlled for psychological distress in the event that students who perceive their teacher to be caring may be more motivated because they experience less psychological stress related to challenges at school. In addition, she controlled for internal control beliefs because they have been positively related to perceived social support (Lahey & Cassidy, 1990). Wentzel defined social motivation as the pursuit of prosocial and social responsibility goals and academic motivation as academic effort in each academic subject area (including English, math, social studies, and science). Finally, Wentzel explored eighth-grade students' descriptions of "a caring teacher."

The results suggested that students who perceive their teachers to be caring are more likely to pursue prosocial and social responsibility goals and exert greater effort in their academic work than students who do not perceive their teachers to be caring, regardless of their level of psychological distress and internal control beliefs. In addition, students characterized a caring teacher as someone who models a caring attitude towards teaching, uses a democratic communication style (e.g., focuses on keeping communication open rather than on determining content of communication), develops expectations based on individual differences, and provides constructive feedback. In conclusion, Wentzel (1997) emphasized that the relationship between teachers and students is a powerful source of motivation that has been largely overlooked in the motivation literature.

Wentzel (1998) further explored the role of relationships in motivation in a study that examined sixth-graders' perceived support from parents, teachers, and peers and several variables related to motivation, including school- and class-related interest, academic goal orientations (performance and mastery goal orientations), and social goal pursuit (prosocial and social responsibility goals). In addition, she looked at how social support and motivation are related to psychological distress and academic performance (i.e., grade point average). Wentzel hypothesized that, although lower levels of psychological distress did not explain the relationship between teacher support and motivation in her previous study (Wentzel, 1997), they may play a role in the influence of parent and peer support on motivation. She proposed that, in turn, high levels of motivation should explain successful academic performance.

The results suggested that the influence of supportive relationships on motivation depends on the type of relationship and the aspect of motivation. For instance, teacher support predicted both school and class-related interest as well as social responsibility goal pursuit. Both parent and peer support predicted school-related interest by way of psychological distress. In other words, parent and peer support were related to lower levels of psychological distress which, in turn, were related to greater interest in school. In addition, parent support predicted goal orientations and peer support predicted prosocial goal pursuit. In addition to these results, none of the social relationships directly predicted academic performance. That is, parent support only indirectly related to grade point average by way of its relationship to school-related interest. Similarly, teacher support related to grade point average through its relationship to the pursuit of social responsibility goal and both types of interest. In conclusion, Wentzel noted that the results were consistent with earlier findings suggesting that teacher support plays a critical role in academic motivation (Wentzel, 1997), peers have a great deal of influence on prosocial behavior (Youniss, 1994; Youniss & Smollar, 1985), and parenting styles influence the type of goal orientation adopted in an academic setting (Heyman, Dweck, & Cain, 1992; Hokoda & Fincham, 1995).

Wentzel has presented three different models (Wentzel, 1999, 2000) to describe the relationship between social goals and academic achievement. First, the complementary relations model describes a unidimensional relationship between social goals and academic achievement. For example, if students strive to be socially competent, they will find themselves in cooperative learning situations which, in turn, will lead to opportunities for

cognitive conflict and, thus, academic growth. Second, the developmental relations model suggests that the pursuit of both social goals and task goals are rooted in the universal human need for social relatedness. Therefore, if individuals pursue social goals, they are likely pursuing academic goals as well, given that academic achievement is often valued by others in the educational setting. Third, the hierarchical relations model proposes that social and academic goals may be linked hierarchically (i.e., in the individual's mind). For example, a student may come to school with the goal of attaining positive relationships with teachers. One way to achieve this general social goal is to strive for more specific goals (i.e., form academic goals because teachers are pleased with students who achieve). Overall, according to Wentzel's approach, goals describe what students are trying to achieve in the educational setting. The relationship between social goals and academic achievement may be explained by three different models: the complementary relations model, the developmental relations model, or the hierarchical relations model.

Social Academic Goals

Urdan and Maehr (1995) criticized Wentzel's (1989, 1993) conceptualization of social goals. They argued that her work diverges from other goal theory research because she has been less interested in goals as underlying reasons for achieving than on the explicit aspiration of social goals. Her construct of social goals is content-based and does not directly address social concerns for academic achievement. Rather, she has focused on goals directed at attaining social competence, such as social responsibility and prosocial behavior and, then, linked these goals to academic goals. Within the goal theory framework, social concerns (or goals), along with ability concerns, have typically been

incorporated in the performance goal construct. Curiously, performance goals are rarely mentioned and often omitted from Wentzel's work.

Urdu and Maehr (1995) convincingly argued that social concerns and ability concerns, the underlying factors of the performance goal construct, should be examined separately because they lead to different cognitive, affective, and behavioral influences on motivation. Instead, they proposed that social concerns should be studied under a different heading called social academic goals. They also suggested that the relationship between social motives for achieving and educational outcomes will depend on the type of social concern as well as the antecedents and consequences of the academic behavior. For example, all types of social goals, including social approval goals, social responsibility goals, social status goals, prosocial goals, and the goal of social affiliation will have varying effects on motivation depending on a number of factors (e.g., values of the target individual or individuals, the conditions of the educational setting).

The current study is designed to explore some of the same social concerns found in Wentzel's research (e.g., the role of the teacher-student and student-student relationships in academic motivation). However, these concerns are approached from the perspective that goals are reasons for achieving academically (i.e., answering the question "why" rather than "what" as in Wentzel's research). As such, they fall easily in Urdu and Maehr's (1995) category of social academic goals. It may be that social academic goals are a particularly important source of motivation when children lack interest in a subject matter, in light of Wentzel's finding that teacher and peer support indirectly affect student achievement.

Summary

Several motivation researchers have documented the important role of social influences on motivation in the school setting (Baumeister, 1995; Connell & Wellborn, 1991; Deci et al., 1991; Dweck, 1996; Goldstein, 1999; Harter, 1996). However, Wentzel (1991, 1996a, 1997, 1978, 1999, 2000), in particular, has been guided by a goal theory framework. Using a content-based perspective on goals, Wentzel has provided substantial evidence of the importance of social goals in the educational setting and suggested ways of thinking about the relationship between social goals and academic achievement. Urdan and Maehr (1995) argued that Wentzel's content-based approach diverges from other goal theory research in that her goals do not represent reasons for achieving in an educational setting. Instead, Urdan and Maehr proposed that social concerns be removed from the performance goal construct (i.e., studied separately from ability concerns) and researched under the heading of social academic goals. The current study focuses on the relationship between the pursuit of social academic goals in conditions of low interest and students' academic achievement.

Gender Differences and Achievement Goal Orientation

Researchers (Midgley et al., 2001; Pintrich & Schunk, 1996; Wentzel, 1996a) have noted a need for more research on gender differences in goal orientation, particularly in light of findings indicating significant differences between boys and girls on motivation variables. For instance, in a study of 80 6th and 7th graders, Harter (1975) found that girls spent more time on a task when they were given intermittent verbal reinforcement by an experimenter than when they were left alone. In contrast, boys tended to spend more time

on the same task when left alone. Boys also spent a greater amount of time on unsolvable tasks than on solvable tasks. For girls, this difference was not significant. Harter concluded that girls have a stronger need for social approval than boys. She also suggested that boys may have more mastery motivation than girls, although this claim has not been supported by the findings of later studies (Thorkildsen & Nicholls, 1998; Wentzel, 1996a).

Butler (1992) conducted research with 68 6th graders and found that girls tended to be more sensitive to motivational structures than boys. When girls were placed in mastery conditions (i.e., mastery goals were espoused), they tended to more often rate the criteria for their success in degrees of interest, effort, and concentration than when they were placed in an ability condition (i.e., performance goals were espoused). In the ability condition, they were as likely to rate the criteria for their success in terms of relative ability, the desire to do better than others, and the desire to avoid looking worse than others. In addition, when placed in the mastery condition, girls expressed more interest in the task than they did in the ability condition. Conversely, boys expressed more interest in the task when placed in the ability condition.

Within the goal theory framework, a few researchers have found gender differences worth noting. Thorkildsen and Nicholls (1998) surveyed the achievement orientations and beliefs of a large group of fifth graders. They found that boys scored significantly higher on ego orientation items (i.e., performance goal orientation) than on task orientation items (i.e., mastery goal orientation). In contrast, girls scored significantly higher on task orientation items than on ego orientation items. Girls also rated themselves as more

satisfied with school learning than did boys. Similar to Thorkildsen and Nicholls' (1998) findings, Wentzel (1996a, 1997) found that girls reported stronger mastery orientations and weaker performance orientations than did boys in a large study of sixth-graders. In addition, girls had significantly higher scores on social responsibility goals, suggesting that they were more often striving to display prosocial and compliant behavior in school than were boys. Other findings have pointed to academic benefits of performance goals for boys but not for girls. For instance, Urdan (1997b) found a positive relationship between performance-approach goals and associating with friends with a positive orientation towards school for boys only. Bouffard, Boisvert, Vezeau, and Larouche (1995) found that performance goals were positively related to metacognitive strategies but only for boys.

In short, researchers have found significant differences between boys and girls on motivation variables, including achievement goal orientations. However, researchers working within a goal theory framework suggest that more research is needed (Midgley et al., 2001; Pintrich & Schunk, 1996; Wentzel, 1996a).

Conclusion

The current study was motivated by the problem that children show a marked decline in their interest in English and math around the fifth grade that influences their engagement in learning strategies and their academic achievement. Recent efforts to expand goal theory indicate a need to investigate conditions under which social academic goals influence children's motivation and, ultimately, their academic achievement. The goal of this study is to determine whether students with strong social academic goals persist in

using adaptive learning strategies and demonstrate high achievement when their interest in the subject matter is low.

CHAPTER 3 METHODOLOGY

Introduction

This purpose of this study was to determine whether social academic goals are related to 5th-grade students' learning strategies and academic achievement when students' interest in the subject matter is low. Students may have social academic goals related to both teachers and friends, to teachers only, or to friends only. For this reason, this study was designed to investigate social academic goals for teachers and social academic goals for friends as separate predictors. A sample of 5th-grade students were surveyed to assess their interest in English and math, their goal orientations, and their use of learning strategies. In addition, their previous and current scores on standardized achievement tests were collected. The participants, procedures, research instruments, and methods of data analyses used in this study are described in this chapter.

Participants

The participants were recruited from regular education 5th-grade classrooms at three elementary schools in Wakulla County, an area located along the Gulf of Mexico within commuting distance of Tallahassee, Florida. Although residents of Wakulla County have traditionally been involved in farming and fishing, this region has recently experienced an influx of residents who commute to professional jobs in Tallahassee. One hundred eighty-one students participated in the study. However, 31 students had missing data, resulting in

a final total of 150 participants. The students were selected on the basis of their attendance in the fifth grade and consent from their parents. Seventy-six males and 74 females were included in the final study. In school records, 136 participants identified themselves as White, 12 participants identified themselves as African-American, 1 participant identified himself as Hispanic, and 1 participant identified herself as Asian. Thirty-one percent of the sample received free lunches and 10% received reduced pay lunches based on their families' incomes. Fifty-nine percent of the sample paid full price for their lunch. In order to qualify for a free lunch from June 1, 1999 to June 20, 2000, a family with four members living in a household had a gross annual income of \$21,710 or less. In order to qualify for a reduced pay lunch, a family with four members in a household had a gross annual income of \$30, 895 or less. Access to the participants' cumulative folders was requested on the consent form in order to obtain additional information, including their scores on the Terra Nova Comprehensive Tests of Basic Skills (TNCTBS) and the Florida Comprehensive Assessment Test (FCAT) (see Appendix A).

Procedures

Participants were asked to complete a questionnaire that addressed their interest in two subject domains (English and math), their achievement goal orientation (task goals, also known as mastery goals; performance-approach goals and performance-avoid goals, both also known as performance goals or ability goals; teacher-related social academic goals and friends-related social academic goals) for each subject domain, and their learning strategies in each subject domain (adaptive or maladaptive learning strategies) (see Appendices C and D for English and math surveys). I administered the surveys to the

participants at school (i.e., in a classroom or cafeteria) in a group setting during school hours in May of 2000. In addition, I collected their previous and current scores on the reading and math sections of the Terra Nova Comprehensive Tests of Basic Skills (TNCTBS) and the Florida Comprehensive Assessment Test (FCAT), administered to them in the spring of their 4th- and 5th-grade years.

Measures

Interest

The questionnaire included two items designed to assess participants' interest in each subject domain. Both items were measured on a 7-point Likert scale. The items are as follows: (a) "In general, I find working on math (English) assignments" (1= very boring, 7= very interesting) and (b) "How much do you like math (English)?" (1= a little, 7= a lot). These items were adopted from a study with similar-aged participants (Wigfield et al., 1997). Wigfield et al. reported that, as a measure of interest, these items had internal consistency coefficients ranging from .73 to .92 across several subject domains including math and reading.

The validity of these items has been demonstrated in several studies concerning students' valuing of specific academic subjects (Eccles et al., 1983; Eccles et al., 1989; Eccles et al., 1993; Wigfield, Eccles, Mac Iver, Reuman, & Midgley, 1991). In these studies, researchers investigated students' subjective task value which they defined in three components: a student's interest in, sense of usefulness, and belief in importance of a specific activity or academic subject. Eccles and her colleagues (Eccles et al., 1993) reported that, by the fifth grade, children differentiate between the three components of

subjective task value. The items used in the present study were designed to measure interest, one component of subjective task value.

Eccles and her colleagues found that subjective task value is predictive of adolescents' decisions to enroll in math and English classes, their involvement in sports, and their choice of college major (Eccles, 1984; Eccles et al., 1983; Eccles & Harold, 1991; Feather, 1988; Meece, Wigfield, & Eccles, 1990). They also reported evidence of discriminant validity in a study with younger elementary-aged students (Eccles et al., 1993). Using confirmatory factor analysis, the researchers tested a one- and two-factor model to determine whether children distinguished between their sense of competence in an academic subject and their subjective task value of that same subject. A two-factor model, competence and subjective task value, resulted in a good fit. The chi-square to degrees of freedom ratios were around 2.0. Almost all the goodness of fit indices (GFIs) and the Tucker-Lewis Indices (TLIs) were greater than .90 across all subject domains, including reading and math. In addition, this factor structure was consistent for all grade levels in the study (first, second, and fourth-grades). In short, the evidence suggested that children do distinguish between their perceptions of competence in an academic subject and their valuing of that subject.

Achievement Goal Orientation

The questionnaire included three achievement goal orientation scales (task goals, performance-approach goals, and performance-avoid goals) from the Patterns of Adaptive Learning Survey (PALS) (Midgley et al., 1997) and one social academic goal orientation scale developed for this study.

The PALS scales have been used extensively in motivation research to assess students' reasons for achieving in academic settings (Kaplan & Midgley, 1996; Midgley, Arunkumar, & Urdan, 1996; Midgley et al., 1998; Roeser, Midgley, & Urdan, 1996; Urdan, 1997). PALS yields three achievement goal orientation scales: (a) Task goal orientation. The task goal orientation scale consists of five items designed to assess the degree to which students are motivated to gain knowledge, understanding, and skill in the academic setting. In other words, if asked about their reasons for trying to achieve in a particular class, students with task goal orientations score high on this scale. (b) Performance-approach goal orientation. Midgley et al. (1997) distinguished between two types of performance goal orientation: performance-approach goal orientation and performance-avoid goal orientation. The performance-approach scale contains five items. Students with a performance-approach goal orientation strive to demonstrate their competence in the classroom. (c) Performance-avoid goal orientation. The performance-avoid goal orientation contains six items. In the classroom, students with this orientation are mostly concerned with avoiding looking incompetent. In the present study, all items were measured on a 7-point Likert scale (1= not at all true of me, 7= very true of me).

Research evidence suggests that the PALS has good reliability and moderate stability. Middleton and Midgley (1997) reported that Cronbach's alpha for each of the goal orientation scales is .84. The task goal orientation scale has not been found to correlate with either the performance-approach or the performance-avoid scale. However, Middleton and Midgley found a correlation of .56 between the performance-avoid and performance-approach scales for math. The stability of the task and performance-approach

scales from fall to spring in the fifth grade year was reported to be .63 and .61 respectively (Anderman & Midgley, 1997). The performance-avoid scale is a relatively new scale and, as yet, no data on its stability are available.

Midgley et al. (1998) also reported extensive convergent and discriminant evidence to demonstrate the construct validity of the PALS. Regarding convergent evidence, both the task goal orientation scale and the performance-approach goal orientation scale correlate significantly and positively with similar scales used by Nichols (1989) to assess task goals and ego goals (correlation coefficients for PALS task goal orientation and Nichols' task goals were .67 and .63 for PALS performance-approach and Nichols' ego goals). No convergent evidence was available for the performance-avoid scale. Midgley et al. also reported that, in general, as predicted by theory and other research findings, the task goal orientation scale was positively correlated with academic self-efficacy, adaptive learning strategies, and positive affect. The performance-approach and performance-avoid scales were positively related, negatively related, or unrelated to academic self-efficacy depending upon the study. With one exception (Meece et al., 1988) among several studies, the performance-approach and performance-avoid scale were positively related to maladaptive learning strategies and either negatively related, or unrelated to affect.

Midgley et al. (1998) provided evidence of the discriminant validity of PALS (i.e., the three scales are substantially different) using confirmatory factor analysis of data obtained from a sample of sixth graders. They reported that the chi-square test statistic was $\chi^2 (116, N = 647) = 298.55, p < .001$, the Goodness-of-fit index (GFI) was .95, the Tucker-Lewis index (TLI) was .95, the Comparative fit index (CFI) was .96, and the Root Mean Square

of Error Approximation (RMSEA) was .049 with $P(0.05) = .55$. On the basis of these criteria, Midgley et al. reported a good fit for the model. On the three scales, the range of factor loadings was .42 to .81 (only four items loaded below .60). In short, the evidence suggested that the three scales of the PALS measure three substantially different constructs.

In addition, Midgley and Urda's (2001) recent study of the relationship between achievement goals and the use of academic self-handicapping strategies provided further evidence of the discriminant validity of the three goal scales. Academic self-handicapping strategies are avoidance strategies (e.g., deliberately withholding effort in school, procrastination) used by students so that they will not be viewed as having low ability in the event that their academic performance is low. Midgley and Urda's results are consistent with goal theory. Using hierarchical multiple regression to analyze data obtained from a large sample of seventh-graders, they found that performance-avoid goals were a significant positive predictor of self-handicapping strategies ($\beta = .30, p < .001$), performance-approach goals were not a significant predictor of self-handicapping strategies, and task goals were a significant negative predictor of self-handicapping strategies ($\beta = -.17, p < .05$).

Social Academic Goal Orientation Scale.

I developed the Social Academic Goal Orientation Scale for the purpose of assessing fifth graders' social academic goals. Ten items (measured on a 7-point Likert scale; 1 = not at all like me, 7 = a lot like me) were included in the questionnaire. Two subscales were created. The first one, teacher-related social academic goals, included five items

designed to assess social academic goals related to the teacher. The second one, friends-related social academic goals, included five items designed to assess social academic goals related to friends (see Appendix E for items).

A pilot study was conducted to determine whether the Social Academic Goal Orientation Scale would provide a valid and reliable assessment of fifth-graders' social academic goals. First, a content validation procedure that consisted of a review of the items by a panel of four experts was conducted. The panel of experts included two college professors with Ph.Ds in educational psychology and two graduate students seeking doctorates in educational psychology. Each expert individually reviewed the items and determined them to be appropriate measures of students' social academic goals.

Second, in order to determine the internal consistency of the Social Academic Goal Orientation Scale, 82 students were recruited from four elementary schools in Alachua County, Florida. They were selected on the basis of their attendance in fifth grade and consent from their parents. Participants completed two 20-item surveys. The two surveys were identical with the exception that one survey addressed the participants' social academic goals and learning strategies related to the subject of English and the second survey addressed the participants' social academic goals and learning strategies related to the subject of math. Each survey included 10 items from the Social Academic Goal Orientation Scale and 10 items designed to assess learning strategies adopted from a study conducted by Kaplan and Midgley (1997). (Reliability and validity information pertaining to the learning strategies items is provided below.)

Cronbach's alpha coefficients were calculated to provide estimates of the internal consistency of the Social Academic Goal Orientation Scale (see Table 1). On the math version of teacher-related social academic goal subscale, the correlations between each item and the total score ranged from .77 to .86. The correlations between each item and the total score on the English version of the teacher-related social academic subscale ranged from .75 to .84. On the math and English versions of the friends-related social academic subscale, correlations between each item and the total score ranged from .88 to .92 and from .82 to .85, respectively. Overall, the results suggested that the Social Academic Goal Orientation Scale has moderate to strong internal consistency.

Table 1

Reliability Coefficients for the Social Academic Goals Scale

Subscale	Cronbach's α
English Survey	
Teacher-related social academic goals	.83
Friends-related social academic goals	.86
Math Survey	
Teacher-related social academic goals	.84
Friends-related social academic goals	.91

Learning Strategies

Ten items (measured on a 7-point Likert scale; 1 = not at all like me, 7 = a lot like me) adopted from a study conducted by Kaplan and Midgley (1997) were included in the questionnaire. The items yield two scales, adaptive learning strategies and maladaptive learning strategies.

Kaplan and Midgley (1997) provided evidence of good reliability and construct validity for these scales. They reported that Cronbach's alpha for the adaptive learning strategies scale was .78 for English and .74 for math. Cronbach's alpha for the maladaptive strategies scale was .77 for English and .80 for math. In their original study, Kaplan and Midgley expected the scales (adaptive and maladaptive learning strategies) to correlate with each other. Therefore, in order to gather evidence of discriminant validity, they conducted a factor analysis with oblique rotation and determined that the items do load on distinct factors. The range of factor loadings for each scale was .55 to .90 with only two items with factor loadings below .61. The two scales did correlate negatively with each other ($r = -.46$, $p < .01$ in English and $r = -.24$, $p < .01$ in math). In addition, as predicted by achievement goal theory and by earlier studies, Kaplan and Midgley found that adaptive learning strategies correlated positively with task goal orientation ($r = .60$, $p < .01$ in English and $r = .61$, $p < .01$ in math). Maladaptive learning strategies correlated negatively with task goal orientation ($r = -.59$, $p < .01$ in English and $r = -.53$, $p < .01$ in math) and positively with performance goal orientation ($r = .24$, $p < .05$ in English and $r = .46$, $p < .01$ in math).

Achievement

Participants' previous year and current scores on the reading and mathematics sections of the Terra Nova Comprehensive Tests of Basic Skills (TNCTBS) and the Florida Comprehensive Assessment Test (FCAT) were collected. As fourth-graders, participants were administered the Sunshine State Standards (SSS) portion of the FCAT in reading and the TNCTBS in mathematics. The FCAT (SSS) in reading is a criterion-referenced achievement test developed by Harcourt Educational Measurement as a part of a contract with the Florida Department of Education. This test is designed to assess academic performance in areas related to reading comprehension. Two types of questions are included on FCAT (SSS) in reading: multiple-choice and performance tasks. The TNCTBS is a nationally standardized achievement test published by CTB/McGraw Hill. The TNCTBS in mathematics is designed to assess conceptual, applied, and computational knowledge and includes both multiple-choice and performance tasks questions. In fifth grade, participants were administered the norm-referenced portion (NRT) of the FCAT in reading and in math. The NRT portion of the FCAT was developed by Harcourt Educational Measurement and published by The Psychological Corporation for the purpose of comparing the academic performance of Florida students with the academic performance of students across the nation. The FCAT (NRT) is designed to assess reading comprehension and mathematics problem-solving skills and contains only multiple-choice items. A recent study on the use of curriculum-based measurement (CBM) to predict performance on the FCAT (Kranzler, Taylor, & Ross, 2001) provided strong construct validity for the FCAT reading test. Among the findings, students' scores on the FCAT

reading test were significantly correlated with their results on curriculum-based (CBM) reading measures in grade 4 ($r = .602$). In addition, the researchers found that students' results on CBM reading measures administered in the third grade were significantly related to their scores on the FCAT reading test seven years later.

Data Analysis

This study was designed to examine relationships among students' academic goals, learning strategies, and academic achievement. In particular, five hypotheses were tested. First, descriptive statistics for all the measures were calculated. Gender differences for each variable were also examined. For the first hypothesis, partial correlations were calculated to examine whether students' task goals, performance-approach goals, and social academic goals were positively related to students' adaptive learning strategies and achievement, when prior achievement and gender were controlled. For the second hypothesis, partial correlations were calculated to examine whether students' performance-avoid goals were negatively related to adaptive learning strategies and achievement, when prior achievement and gender were controlled.

For the third hypothesis, a path analysis was tested to examine whether students' learning strategies mediated the relationship between students' goals and academic achievement. The following sets of regression equations were estimated: Each type of learning strategy (adaptive or maladaptive) was regressed on each type of academic goal (task, performance-avoid, performance-approach, and social academic goal) and academic achievement was regressed on each type of learning strategy (adaptive or maladaptive). For the first set of regression equations, the students' total scores on each of the four

academic goal scales were continuous independent variables and the students' total scores on each of the two learning strategies were continuous dependent variables. For the second set of equations, the students' total scores on the two learning strategies scales were the continuous independent variables and students' total scores on the reading and math sections of the achievement measures were the continuous dependent variables.

For the fourth hypothesis, simultaneous multiple regression was used to examine whether students' interest in the academic subject moderated the relationship between social academic goals and academic achievement. In the regression equation, students' scores on social academic goals scale were a continuous independent variable, students' scores on the interest scale were a continuous independent variable, and students' scores on the reading and math sections of the achievement measures were continuous dependent variables. Academic achievement was hypothesized to be a function of social academic goals when interest is low. For this reason, a statistical interaction between students' scores on the interest scale and their scores on the social academic goals scale was expected when predicting students' scores on the reading and math sections of the achievement measures.

For the fifth hypothesis, simultaneous multiple regression was used to examine whether students' interest in the academic subject moderated the relationship between social academic goals and adaptive learning strategies. In the regression equation, students' scores on social academic goals scale were a continuous independent variable, students' scores on the interest scale were also a continuous independent variable, and students' scores on the adaptive learning strategies scale were a continuous dependent

variable. Adaptive learning strategies were hypothesized to be a function of social academic goals when interest was low. For this reason, a statistical interaction between students' scores on the interest scale and their scores on the social academic goals scale was expected when predicting students' scores on the adaptive learning strategies scale.

CHAPTER 4 RESULTS

Introduction

The primary research questions in this study were whether (a) students' task goals, performance-approach goals, and social academic goals were positively related to students' adaptive learning strategies and achievement after controlling for the effects of prior achievement and gender, (b) students' performance-avoid goals were negatively related to adaptive learning strategies and achievement after controlling for the effects of prior achievement and gender, (c) students' learning strategies mediated the relationship between students' goals and academic achievement, (d) students' interest in the academic subject moderated the relationship between social academic goals and academic achievement, and (e) students' interest in the academic subject moderated the relationship between social academic goals and adaptive learning strategies. In order to examine these questions, five hypotheses were tested using bivariate correlations, path analysis, and multiple regression.

Each student was asked to complete two surveys, an English survey and a math survey, and their scores on the annual standardized achievement tests for reading and math for grades 4 and 5 were obtained from their cumulative folders. Results of the analyses of the surveys and achievement tests are presented separately for English and mathematics in the sections that follow.

Descriptive Statistics

The means and standard deviations of the students' scores on the motivational variables, learning strategies, and achievement tests for English and mathematics are presented in Table 2. The students' means in English and mathematics for the motivational variables, learning strategies, and achievement tests are similar. Interestingly, the students' mean scores on the measure of their teacher-related social academic goals were higher than their scores on the measure of their friends-related social academic goals.

Gender Differences Among Variables

Independent samples t-tests were used to examine possible gender differences among the variables (see Tables 3 and 4). Boys reported stronger performance-approach goals than girls in both English and math, $t(148) = 3.47$, $p < .01$ for English and $t(148) = 3.58$, $p < .01$ for math. They also reported stronger performance-avoid goals than girls in both English and math, $t(148) = 2.76$, $p < .01$ for English and $t(148) = 2.51$, $p < .05$ for math. Finally, boys reported stronger friends-related social academic goals in math than girls, $t(148) = 2.86$, $p < .01$. Given these findings, subsequent analyses controlled for the potentially confounding influence of gender.

Hypothesis 1

Partial correlation analysis was used to test the first hypothesis that students' task goals, performance-approach goals, and social academic goals (both teacher and friend-related) are positively related to adaptive learning strategies and academic achievement when gender and prior achievement are controlled. Partial correlations were calculated for

Table 2

Descriptive Statistics for Motivational and Achievement Variables

Variable	<u>English</u>		<u>Math</u>	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
Interest ^a	6.89	3.35	8.72	4.03
Task goals ^b	22.07	6.92	24.67	6.86
Performance-approach goals ^b	20.33	8.12	20.81	8.19
Performance-avoid goals ^c	20.20	9.41	21.19	9.85
Teacher-related social academic goals ^b	22.65	8.19	23.46	8.47
Friends-related social academic goals ^b	15.57	8.08	16.59	8.24
Adaptive learning strategies ^c	20.69	6.64	22.01	6.48
Maladaptive learning strategies ^d	13.00	5.64	13.95	5.76
Reading achievement (4th-grade) ^e	310.03	45.99	—	—
Reading achievement (5th-grade) ^f	661.19	35.23	—	—
Math achievement (4th-grade) ^g	—	—	643.29	31.77
Math achievement (5th-grade) ^h	—	—	665.39	35.04

^aScores may range from 2 to 14. ^bScores may range from 5 to 35. ^cScores may range from 6 to 42. ^dScores may range from 4 to 28. ^eScores range from 100 to 500. ^fScores range from 424 to 863. ^gScores range from 0 to 999. ^hScores range from 424 to 863. Higher scores reflect greater values of each variable.

participants' total scores on each academic goal scale and their total scores on the adaptive learning strategies scale on the English survey and the math survey (separately). In addition, partial correlations were calculated for participants' total scores on each academic goal scale on the English survey and their 5th-grade reading achievement scores

Table 3
Gender Differences in Participants' Interest, Academic Goals, Learning Strategies, and Achievement (English Survey and Reading Achievement)

	<u>Girls</u>		<u>Boys</u>		<u>t</u>
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	
Interest	7.26	3.33	6.53	3.35	-1.35
Task goals	22.93	6.52	21.22	7.23	-1.52
Performance-approach goals	18.08	7.57	22.53	8.10	3.47*
Performance-avoid goals	18.09	8.71	22.25	9.67	2.76*
Teacher social academic goals	22.69	8.35	22.61	8.10	-0.06
Friends social academic goals	14.34	7.61	16.78	8.38	1.86
Adaptive learning strategies	21.73	6.12	19.68	7.00	-1.90
Maladaptive learning strategies	12.12	5.42	13.86	5.75	1.90
Reading ACH (4th-grade)	313.43	48.24	306.71	43.74	-0.89
Reading ACH (5th-grade)	665.23	37.90	657.26	32.20	-1.39

* $p < .01$.

as well as their total scores on each academic goal scale on the math survey and their 5th-grade math achievement scores (see Tables 5-8).

Task Goals

As can be seen in Table 5, the partial correlation coefficient for the average task goal score and the average adaptive learning strategies score on the English survey after controlling for the possible effects of gender and prior achievement was statistically significant ($r = .69, p < .01$). Similarly, the partial correlation coefficient for the average task goal score on the math survey and the average adaptive learning strategies score on the math survey after controlling for the possible effects of gender and prior achievement was also significantly different from .00 ($r = .62, p < .01$).

In contrast, the average task goal score on the English survey and the average 5th-grade reading achievement score after controlling for the effects of gender and prior achievement yielded a partial correlation coefficient that was not statistically significant ($r = -.06, p > .05$). In addition, the partial correlation coefficient for the average task goal score on the math survey and the average 5th-grade math achievement score after controlling for the possible effects of gender and prior achievement was not statistically significant ($r = -.08, p > .05$). Overall, these results suggest that, although participants' tasks goals are positively related to their use of adaptive learning strategies, their task goals are not related to their scores on a 5th-grade reading and math achievement tests after the possible effects of gender and prior achievement are controlled.

Table 4

Gender Differences in Participants' Interest, Academic Goals, Learning Strategies, and Achievement (Math Survey and Math Achievement)

	<u>Girls</u>		<u>Boys</u>		<u>t</u>
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	
Interest	8.69	3.84	8.75	4.24	0.09
Task goals	25.55	6.59	23.82	7.06	-1.56
Performance-approach goals	18.47	7.37	23.08	8.39	3.58**
Performance-avoid goals	19.18	9.18	23.16	10.14	2.52*
Teacher social academic goals	23.73	8.46	23.20	8.53	-0.38
Friends social academic goals	14.69	7.24	18.45	8.76	2.86*
Adaptive learning strategies	22.38	6.62	21.64	6.35	-0.69
Maladaptive learning strategies	13.19	5.12	14.70	6.26	1.61
Math ACH (4 th -grade)	643.22	35.15	643.36	28.34	0.03
Math ACH (5 th -grade)	665.28	37.73	665.49	32.46	0.04

* $p < .05$. ** $p < .01$.

Performance-Approach Goals

A similar pattern of results was found when partial correlations were calculated for participants' scores on the performance-approach scale, their total scores on the adaptive

learning strategies scale, and their average scores on achievement tests (see Table 6). The partial correlation coefficient for the average performance-approach goal score and the average adaptive learning strategies score on the English survey after controlling for the possible effects of gender and prior achievement was statistically significant ($r = .31$, $p < .01$). The partial correlation coefficient for the average performance-approach goal score on the math survey and the average adaptive learning strategies score on the math survey after controlling for the possible effects of gender and prior achievement also was statistically significant ($r = .20$, $p < .05$).

However, scores on the performance-approach scale on the English survey were not related to the average 5th-grade reading achievement score. The partial correlation coefficient for the average performance-approach goal score on the English survey and the average 5th-grade reading achievement score after controlling for the possible effects of gender and prior achievement was not statistically significant ($r = .10$, $p > .05$). Also, the partial correlation coefficient for the average performance-approach goal score on the math survey and the average 5th-grade math achievement score after controlling for the possible effects of gender and prior achievement was not statistically significant ($r = -.02$, $p > .05$). In sum, these results suggest that there was a relationship between students' performance-approach goals and their use of adaptive strategies for both English and math but there was no relationship between participants' ratings on the performance-approach subscale and their scores on a 5th-grade reading and math achievement tests after the possible effects of gender and prior achievement were controlled.

Table 5

Partial Correlations Between Task Goals, Adaptive Learning Strategies, and 5th-grade Achievement After Controlling for the Effects of Gender and Prior Achievement

Variable	1	2	3
English Survey			
1. Task goals	--	--	--
2. Adaptive learning strategies	.69*	--	--
3. Reading (5th-grade)	-.06	-.13	--
Math Survey			
1. Task goals	--	--	--
2. Adaptive learning strategies	.62*	--	--
3. Math (5th-grade)	-.08	-.11	--

* $p < .01$.

Teacher-Related Social Academic Goals

As shown in Table 7, participants' scores on the teacher-related social academic goals scale were also significantly related to their use of adaptive learning strategies in both English and math but not related to their 5th-grade reading and math achievement scores.

Table 6

Partial Correlations Between Performance-Approach Goals, Adaptive Learning Strategies, and 5th-grade Achievement After Controlling for the Effects of Gender and Prior Achievement

Variable	1	2	3
English Survey			
1. Performance-approach goals	--	--	--
2. Adaptive learning strategies	.31*	--	--
3. Reading (5th-grade)	.10	-.13	--
Math Survey			
1. Performance-approach goals	--	--	--
2. Adaptive learning strategies	.20*	--	--
3. Math (5th-grade)	-.02	-.11	--

* $p < .01$.

The average teacher-related social academic goal score and the average adaptive learning strategies score on the English survey after controlling for the possible effects of gender and prior achievement yielded a partial correlation coefficient that was statistically significant ($r = .52, p < .01$). The partial correlation coefficient for the average teacher-

related social academic goal score on the math survey and the average adaptive learning strategies score on the math survey after controlling for the possible effects of gender and prior achievement was also statistically significant ($r = .30, p < .01$).

Table 7

Partial Correlations Between Teacher-Related Social Academic Goals, Adaptive Learning Strategies, and 5th-grade Achievement After Controlling for the Effects of Gender and Prior Achievement

Variable	1	2	3
English Survey			
1. Teacher-related social academic goals	--	--	--
2. Adaptive learning strategies	.52*	--	--
3. Reading (5th-grade)	-.12	-.13	--
Math Survey			
1. Teacher-related social academic goals	--	--	--
2. Adaptive learning strategies	.30*	--	--
3. Math (5th-grade)	-.01	-.11	--

* $p < .01$.

In contrast, the partial correlation coefficient for the average teacher-related social academic goal score on the English survey and the average 5th-grade reading achievement score after controlling for the effects of gender and prior achievement was not statistically significant ($r = -.12, p > .05$) nor was the partial correlation coefficient for the average teacher-related social academic goal score on the math survey and the average 5th-grade math achievement score after controlling for the possible effects of gender and prior achievement ($r = .01, p > .05$).

These results suggested that, although participants' teacher-related social academic goals were related to their use of adaptive learning strategies in both math and English, their teacher-related social academic goals were not related to their performance on 5th-grade reading and math achievement tests after controlling for gender and prior achievement.

Friends-Related Social Academic Goals

Consistent with the above pattern of results, participants' scores on the friends-related social academic goals scale and their scores on the adaptive learning strategies scale on both the English and math surveys were positively and significantly related (see Table 8). The partial correlation coefficient for the average friends-related social academic goal score and the average adaptive learning strategies score on the English survey after controlling for the possible effects of gender and prior achievement was statistically significant ($r = .51, p < .01$), as was the partial correlation coefficient for the average friends-related social academic goal score on the math survey and the average adaptive

learning strategies score on the math survey after controlling for the possible effects of gender and prior achievement ($r = .40$, $p < .01$).

Table 8

Partial Correlations Between Friends-Related Social Academic Goals, Adaptive Learning Strategies, and 5th-grade Achievement After Controlling For the Effects of Gender and Prior Achievement

Variable	1	2	3
English Survey			
1. Friends-related social academic goals	--	--	--
2. Adaptive learning strategies	.51*	--	--
3. Reading (5th-grade)	-.11	-.13	--
Math Survey			
1. Friends-related social academic goals	--	--	--
2. Adaptive learning strategies	.40*	--	--
3. Math (5th-grade)	-.04	-.11	--

* $p < .01$.

However, the partial correlation coefficient for the average friends-related social academic goal score on the English survey and the average 5th-grade reading achievement score after controlling for the effects of gender and prior achievement was not statistically significant ($r = -.11, p > .05$). Similarly, the partial correlation coefficient for the average friends-related social academic goal score on the math survey and the average 5th-grade math achievement score after controlling for the possible effects of gender and prior achievement was not statistically significant ($r = -.04, p > .05$). Overall, these results suggested that, although there was a relationship between participants' friends-related social academic goals and their use of adaptive learning strategies, there was no relationship between friends-related social academic goals and 5th-grade reading and math achievement scores after controlling for gender and prior achievement.

Hypothesis 2

Partial correlation analysis was used to test the second hypothesis that students' performance-avoid goals are negatively related to students' adaptive learning strategies and academic achievement, when prior achievement and gender are controlled. Using results from both the English and math surveys, partial correlations were calculated for participants' total scores on the performance-avoid scale, their total scores on the adaptive learning strategies scale, and their scores on 5th-grade reading and math achievement tests (see Table 9).

Performance-Avoid Goals

Contrary to the pattern of results commonly found in the research literature, the participants' performance-avoid goals and their use of adaptive learning strategies in both

English and math were positively related. The partial correlation coefficient for the average performance-avoid goal score and the average adaptive learning strategies score on the English survey after controlling for the possible effects of gender and prior achievement was statistically significant ($r = .29, p < .01$) as was the partial correlation coefficient for the average performance-avoid goal score on the math survey and the

Table 9

Partial Correlations Between Performance-Avoid Goals, Adaptive Learning Strategies, and 5th-grade Achievement After Controlling For Gender and Prior Achievement

Variable	1	2	3
English Survey			
1. Performance-avoid goals	--	--	--
2. Adaptive learning strategies	.29**	--	--
3. Reading (5th-grade)	-.00	-.13	--
Math Survey			
1. Performance-avoid goals	--	--	--
2. Adaptive learning strategies	.22**	--	--
3. Math (5th-grade)	-.18*	-.11	--

* $p < .05$. ** $p < .01$.

average adaptive learning strategies score on the math survey after controlling for the possible effects of gender and prior achievement ($r = .22, p < .05$). In contrast, the partial correlation coefficient for the average performance-avoid goal score on the English survey and the average 5th-grade reading achievement score after controlling for the effects of gender and prior achievement was not statistically significant ($r = -.00, p > .05$). However, the partial correlation coefficient for the average performance-avoid goal score on the math survey and the average 5th-grade reading achievement score after controlling for the possible effects of gender and prior achievement was negative and statistically significant ($r = -.18, p < .05$). In sum, these results suggest that the participants' performance-avoid goals and their use of adaptive strategies were positively related, their performance-avoid goals and performance on a 5th-grade reading achievement tests were unrelated, and, finally, their performance-avoid goals and their performance on a 5th-grade math achievement test were negatively related after controlling for gender and prior achievement.

Hypothesis 3

Structural equation modeling was used to test the third hypothesis that learning strategies mediate the relationship between students' goals and their academic achievement. One model that included students' learning strategies (i.e., adaptive and maladaptive) and academic goals (i.e., task, performance-approach, performance-avoid, social academic goals [both teacher and friends-related]) in both English and math as well as their 5th-grade reading and math achievement was tested using LISREL 8.30 (Joreskog & Sorbom, 2000). Fourth-grade reading and math achievement were controlled.

The model provided a good fit to the data: CFI = .95, SRMR = .05. However, all of the relationships between the learning strategies and 5th-grade academic achievement were statistically nonsignificant. That is, the relationship between students' adaptive learning strategies in English and their 5th-grade reading was nonsignificant, ($\beta = -.29$, $p > .05$), as was the relationship between students' maladaptive learning strategies in English and their 5th-grade reading achievement, ($\beta = -.51$, $p > .05$). Similarly, the relationship between students' adaptive learning strategies in math and their 5th-grade math achievement was nonsignificant, ($\beta = -.24$, $p > .05$) and the relationship between students' maladaptive learning strategies in math and their 5th-grade math achievement was nonsignificant, ($\beta = -.28$, $p > .05$). Based on these results, the hypothesis was not supported. Students' learning strategies did not mediate the relationship between their goals and their achievement in reading and math.

Hypothesis 4

Multiple regression analyses were used to test the fourth hypothesis that students' interest in the academic subject moderates the relationship between social academic goals and academic achievement, when prior achievement and gender are controlled. Four regression models were analyzed; two regression models for each social academic goal (teacher and friends-related) and each academic subject area (English and math) (see Tables 10-13).

The first regression model examined whether students' interest in English moderated the relationship between teacher-related social academic goals and 5th-grade reading achievement and included the following independent variables: students' total scores on

the teacher-related social academic goals scale, and students' total scores on the English interest scale. In addition, the effects of gender and 4th-grade reading achievement were controlled. Fifth-grade reading achievement was hypothesized to be a function of teacher-related social academic goals when interest was low. Therefore, a statistical interaction between students' scores on the English interest scale and their scores on the teacher-related social academic goals scale was expected when predicting students' scores on 5th-grade reading achievement.

The independent variables predicted a significant proportion of the variance in the students' 5th-grade reading achievement, $F(5, 144) = 53.60, p = .000$. However, the test associated with the interaction term was not significant, $t(144) = .304, p = .762$ (see Table 10). The only significant test associated with the independent variables was 4th-grade reading achievement, $t(144) = 15.94, p = .000$. Therefore, interest did not moderate the relationship between students' teacher-related social academic goals and their 5th-grade reading achievement. Instead, 4th-grade reading achievement was the only independent variable in the regression model that explained a significant amount of variance in the students' 5th-grade reading achievement.

The second regression model examined whether students' interest in math moderated the relationship between teacher-related social academic goals and 5th-grade math achievement and included the following independent variables: students' total scores on the teacher-related social academic goals scale, and students' total scores on the math interest scale. In addition, the effects of gender and 4th-grade math achievement were controlled. Fifth-grade math achievement was hypothesized to be a function of teacher-

related social academic goals when interest was low. Therefore, a statistical interaction between students' scores on the math interest scale and their scores on the social academic goals scale (teacher) was expected when predicting students' scores on 5th-grade math achievement. The results were similar to the first regression model. The independent variables predicted a significant proportion of the variance in the students' 5th-grade math achievement, $F(5, 144) = 24.37, p = .000$. However, the test associated with the interaction term was not significant, $t(144) = -1.47, p = .144$ (see Table 11).

Table 10

Hypothesized Regression Model for Predicting 5th-Grade Reading Achievement: Interest and Teacher-Related Social Academic Goals

Variable	<u>B</u>	<u>Standard Error B</u>	β	t
Teacher-related social academic goals	-0.37	0.46	-0.09	-0.81
Interest	-0.91	1.58	-0.09	-0.57
Gender	4.34	3.51	0.06	1.24
4th-grade reading achievement	0.61	0.04	0.80	15.94*
Teacher-related social academic goals x Interest	0.02	0.06	0.06	0.30

Note. Adjusted $R^2 = .64$

* $p < .0000$.

The only significant test associated with the independent variables was 4th-grade math achievement, $t(144) = 10.61$, $p = .000$. So, interest did not moderate the relationship between students' teacher-related social academic goals and their 5th-grade math achievement. Instead, 4th-grade math achievement was the only independent variable in the regression model that explained a significant amount of variance in the students' 5th-grade math achievement.

Table 11

Hypothesized Regression Model for Predicting 5th-Grade Math Achievement: Interest and Teacher-Related Social Academic Goals

Variable	<u>B</u>	<u>Standard Error B</u>	β	t
Teacher-related social academic goals	0.82	0.62	0.20	1.32
Interest	1.75	1.51	0.20	1.16
Gender	0.22	4.29	0.00	0.05
4th-grade math achievement	0.73	0.07	0.66	10.61*
Teacher-related social academic goals x Interest	-0.09	0.06	-0.34	0.14

Note. Adjusted $R^2 = .44$

* $p < .0000$.

The third regression model examined whether students' interest in English moderated the relationship between friends-related social academic goals and 5th-grade reading achievement and included the following independent variables: students' total scores on the friends-related social academic goals scale, and students' total scores on the English interest scale. In addition, the effects of gender and 4th-grade reading achievement were controlled. Fifth-grade reading achievement was hypothesized to be a function of friends-related social academic goals when interest was low. Consequently, a statistical interaction between students' scores on the English interest scale and their scores on the friends-related social academic goals scale was expected when predicting students' scores on 5th-grade reading achievement.

Consistent with results from the first two regression models, the independent variables predicted a significant proportion of the variance in the students' 5th-grade reading achievement, $F(5, 144) = 53.54, p = .000$ but the test associated with the interaction term was not significant, $t(144) = -.330, p = .742$ (see Table 12). The only significant test associated with the independent variables was 4th-grade reading achievement, $t(144) = 15.63, p = .000$. Therefore, the results indicated that interest did not moderate the relationship between students' social academic goals (teacher-related) and their 5th-grade reading achievement. Instead, 4th-grade reading achievement was the only independent variable in the regression model that explained a significant amount of variance in the students' 5th-grade reading achievement.

Table 12

Hypothesized Regression Model for Predicting 5th-Grade Reading Achievement: Interest and Friends-Related Social Academic Goals

Variable	<u>B</u>	<u>Standard Error B</u>	β	<u>t</u>
Friends-related social academic goals	-0.11	0.48	-0.03	-0.22
Interest	-0.17	1.11	-0.02	-0.15
Gender	3.61	3.55	0.05	1.02
4th-grade reading achievement	0.60	0.04	0.78	15.63*
Friends-related social academic goals x Interest	-0.02	0.06	-0.05	-0.33

Note. Adjusted $R^2 = .64$

* $p < .0000$.

The fourth regression model examined whether students' interest in math moderated the relationship between friends-related social academic goals and 5th-grade math achievement and included the following independent variables: students' total scores on the friends-related social academic goals scale, and students' total scores on the math interest scale. The effects of gender and 4th-grade math achievement were also controlled. Since 5th-grade math achievement was hypothesized to be a function of friends-related social academic goals when interest was low, a statistical interaction between students' scores on the math interest scale and their scores on the friends-related social academic

goals scale was expected when predicting students' scores on 5th-grade math achievement.

Table 13

Hypothesized Regression Model for Predicting 5th-Grade Math Achievement: Interest and Friends-Related Social Academic Goals

Variable	<u>B</u>	<u>Standard Error B</u>	β	<u>t</u>
Friends-related social academic goals	-0.25	0.74	-0.06	-0.33
Interest	-0.53	1.23	-0.06	-0.43
Gender	-0.56	4.45	-0.01	-0.13
4th-grade math achievement	0.73	0.07	0.66	10.41*
Friends-related social academic goals x Interest	0.01	0.07	0.05	0.21

Note. Adjusted $R^2 = .43$

* $p < .0000$.

Once again, the independent variables predicted a significant proportion of the variance in the students' 5th-grade math achievement, $F(5, 144) = 23.64$, $p = .000$. However, the test associated with the interaction term was not significant, $t(144) = .214$, $p = .831$ (see Table 13). The only significant test associated with the independent variables was 4th-grade math achievement, $t(144) = 10.41$, $p = .000$. Therefore, interest did not moderate the relationship between students' friends-related social academic goals and their 5th-grade math achievement. Instead, 4th-grade math achievement was the only independent

variable in the regression model that explained a significant amount of variance in the students' 5th-grade math achievement.

Hypothesis 5

Multiple regression analysis was used to test the hypothesis that students' interest in the academic subject moderates the relationship between social academic goals and adaptive learning strategies, when prior achievement and gender are controlled. Four regression models were analyzed; two regression models for each social academic goal (teacher and friends-related) and each academic subject (English and math) (see Tables 14-17).

The first regression model examined whether students' interest in English moderated the relationship between teacher-related social academic goals and adaptive learning strategies and included the following independent variables: students' total scores on the teacher-related social academic goals scale, and students' total scores on the English interest scale. In addition, the effects of gender and 4th-grade reading achievement were controlled. Because the use of adaptive learning strategies was hypothesized to be a function of teacher-related social academic goals when interest was low, a statistical interaction between students' scores on the English interest scale and their scores on the teacher-related social academic goals scale was expected when predicting students' scores on adaptive learning strategies scale.

As shown in Table 14, the results indicated that the independent variables predicted a significant proportion of the variance in the students' use of adaptive learning strategies, $F(5, 144) = 18.80, p = .000$. However, the test associated with the interaction term was

not significant, $t(144) = .430$, $p = .668$. In contrast, the tests associated with teacher-related social academic goals and 4th-grade reading achievement were significant, $t(144) = 2.73$, $p = .007$ and $t(144) = -2.73$, $p = .007$ respectively. Therefore, interest did not moderate the relationship between students' teacher-related social academic goals and adaptive learning strategies. Instead, teacher-related social academic goals was a significant and positive predictor and 4th-grade reading achievement was a significant and negative predictor of students' use of adaptive learning strategies.

The second regression model examined whether students' interest in math moderated the relationship between teacher-related social academic goals and adaptive learning strategies and included the following independent variables: students' total scores on the teacher-related social academic goals scale, and students' total scores on the math interest scale. The effects of gender and 4th-grade reading achievement were also controlled. The use of adaptive learning strategies was hypothesized to be a function of teacher-related social academic goals when interest was low. Therefore, a statistical interaction between students' scores on the math interest scale and their scores on the teacher-related social academic goals scale was expected when predicting students' scores on the adaptive learning strategies scale.

The independent variables predicted a significant proportion of the variance in the students' use of adaptive learning strategies, $F(5, 144) = 10.51$, $p = .000$. However, the test associated with the interaction term was not significant, $t(144) = .800$, $p = .425$ (see Table 15). The test associated with 4th-grade math achievement was significant,

$t(144) = -2.3, p = .023$. In short, interest did not moderate the relationship between students' teacher-related social academic goals and their use of adaptive learning strategies. Instead, only 4th-grade math achievement explained a significant amount of variance in students' use of adaptive learning strategies.

Table 14

Hypothesized Regression Model for Predicting 5th-Grade Reading Adaptive Learning Strategies (English): Interest and Teacher-Related Social Academic Goals

Variable	<u>B</u>	<u>Standard Error B</u>	β	t
Teacher-related social academic goals	0.31	0.11	0.38	2.73*
Interest	0.38	0.39	0.19	0.96
Gender	1.84	0.87	0.14	2.11
4th-grade reading achievement	- 0.03	0.01	-0.18	-2.73*
Teacher-related social academic goals x Interest	0.01	0.02	0.11	0.43

Note. Adjusted $R^2 = .37$

* $p < .01$.

The third regression model examined whether students' interest in English moderated the relationship between friends-related social academic goals and adaptive learning strategies included the following independent variables: students' total scores on the friends-related social academic goals scale, and students' total scores on the English

interest scale. Consistent with the other regression models, the effects of gender and 4th-grade reading achievement were controlled. The use of adaptive learning strategies was hypothesized to be a function of friends-related social academic goals when interest was low. As a result, a statistical interaction between students' scores on the English interest scale and their scores on the friends-related social academic goals scale was expected when predicting students' scores on adaptive learning strategies scale.

Although the independent variables predicted a significant proportion of the variance in the students' use of adaptive learning strategies, $F(5, 144) = 18.73$, $p = .000$, the test associated with the interaction term was not significant, $t(144) = .186$, $p = .853$ (see Table 16). In contrast, the tests associated with friends-related social academic goals and gender were significant, $t(144) = 2.89$, $p = .005$ and $t(144) = 3.01$, $p = .003$, respectively. In the end, interest did not moderate the relationship between students' friends-related social academic goals and adaptive learning strategies. Instead, both friends-related social academic goals and gender were significant and positive predictors of the use of adaptive learning strategies.

The fourth regression model examined whether students' interest in math moderated the relationship between friends-related social academic goals and the use of adaptive learning strategies and included the following independent variables: students' total scores on the friends-related social academic goals scale, and students' total scores on the math interest scale. In addition, the effects of gender and 4th-grade math achievement were controlled. The use of adaptive learning strategies was hypothesized to be a function of

friends-related social academic goals when interest was low. Therefore, a statistical interaction between students' scores on the math interest scale and their scores on the friends-related social academic goals scale was expected when predicting students' scores on adaptive learning strategies scale.

Table 15

Hypothesized Regression Model for Predicting The Use of Adaptive Learning Strategies (Math): Interest and Teacher-Related Social Academic Goals

Variable	<u>B</u>	<u>Standard Error B</u>	β	<u>t</u>
Teacher-related social academic goals	0.11	0.13	0.14	0.81
Interest	0.32	0.32	0.20	1.00
Gender	0.62	0.92	0.05	0.67
4th-grade math achievement	-0.03	0.02	-0.17	-2.30*
Teacher-related social academic goals x Interest	0.01	0.01	0.21	0.80

Note. Adjusted $R^2 = .24$

* $p < .05$

The results indicated that the independent variables predicted a significant proportion of the variance in the students' use of adaptive learning strategies, $F(5, 144) = 12.91$, $p = .000$. However, the test associated with the interaction term was not significant,

$t(144) = 1.08$, $p = .281$ (see Table 17). Furthermore, none of the tests associated with the other independent variables was significant. In short, interest did not moderate the relationship between students' friends-related social academic goals and the use of adaptive learning strategies and no other variables predicted the use of adaptive strategies.

Table 16

Hypothesized Regression Model for Predicting The Use of Adaptive Learning Strategies (English): Interest and Friends-Related Social Academic Goals

Variable	<u>B</u>	<u>Standard Error B</u>	β	<u>t</u>
Friends-related social academic goals	0.34	0.12	0.42	2.89*
Interest	0.53	0.28	0.27	1.93
Gender	2.65	0.88	0.20	3.00*
4th-grade reading achievement	-0.02	0.01	-0.13	-1.92
Friends-related social academic goals x Interest	0.00	0.01	0.04	0.19

Note. Adjusted $R^2 = .37$

* $p < .01$

Table 17

Hypothesized Regression Model for Predicting the Use of Adaptive Learning Strategies (Math): Interest and Friends-Related Social Academic Goals

Variable	<u>B</u>	<u>Standard Error B</u>	β	t
Friends-related social academic goals	0.12	0.15	0.16	0.80
Interest	0.26	0.26	0.16	1.02
Gender	1.73	0.92	0.13	1.88
4th-grade math achievement	-0.03	0.02	-0.13	-1.85
Friends-related social academic goals				
x Interest	0.02	0.01	0.28	1.10

Note. Adjusted $R^2 = .29$

CHAPTER 5 DISCUSSION

Researchers have documented a decline in children's interest in academic subjects around the fifth grade. At the same time, recent efforts to expand goal theory have highlighted a need to further explore the role of social motivation in children's academic endeavors. The purpose of this study was to investigate the possibility that, in conditions of low interest, children continue to use adaptive learning strategies and demonstrate high academic achievement if they have strong social reasons (i.e., goals) for doing so. Since there has been no research on children's social academic goals, a social academic goal scale was developed for this study. Gender differences and relationships among students' interest in math and English, academic goals, learning strategies, and achievement in math and English were also examined.

The results of this study suggest that there are gender differences in fifth-graders' academic goals. Consistent with previous findings (Thorkildsen & Nicholls, 1998; Wentzel, 1996a, 1997), boys reported stronger performance-approach and performance-avoid goals than girls in both English and math, suggesting that they were more likely to be striving to demonstrate competence and avoid looking incompetent in achievement settings than were girls. A new and interesting finding from this study was that the boys were more likely to be motivated for reasons having to do with their friends than girls, as indicated by their stronger friends-related social academic goals. Initially, this finding

seemed surprising, given that girls have traditionally been viewed as more concerned with social issues. Moreover, Wentzel (1997) found that girls reported a stronger pursuit of prosocial goals and social responsibility goals than boys, suggesting that girls are very much concerned with social issues at school. However, Urdan (1997b) also found that boys who rate themselves high on the performance-approach goal scale are particularly sensitive to social influences in the school setting. In his study, boys with strong performance-approach goals were more likely to associate with friends who had a positive orientation towards school than girls or boys without strong performance-approach goals. Together with Urdan's results, the findings of this study may suggest that, because of feelings of competitiveness (i.e., they want to present an appearance of competence), boys are more influenced by their friends in achievement settings than girls. Although research suggests that girls are also influenced by social concerns, their concerns appear to be separate from academic achievement and, instead, related to a desire to attain or demonstrate positive social characteristics.

In contrast to these gender differences, other findings from this study point to similarities among girls and boys. For instance, girls and boys in this study did not differ in their interest in English and math nor did they differ in their 4th and 5th-grade achievement scores in reading and math. They also gave themselves similar ratings in teacher-related social academic goals, and the use of learning strategies for both academic subjects. Finally, in contrast to previous research (Thorkildsen & Nicholls, 1998; Wentzel, 1996a, 1997), the girls and boys in this study did not differ in the strength of their task goals.

Other results from this study were consistent with expectations based on previous research within the goal theory framework. For instance, task goals and performance-approach goals have been linked to academic benefits in the literature. In this study, task goals and performance-approach goals for both English and math were positively related to the use of adaptive learning strategies, as expected. The higher children rated themselves on these academic goals, the more likely they were to report the use of adaptive learning strategies. The positive relationship between social academic goals (both teacher and friends-related) and adaptive learning strategies was an expected but new finding, given that social academic goals have not been previously investigated. The higher students' ratings of themselves on social academic goals (both teacher and friends-related), the more likely they were to use adaptive learning strategies. Of all these academic goals, task goals were most strongly associated with the use of adaptive learning strategies in both English and math and, overall, the academic goals for English had stronger relationships with the use of adaptive learning strategies than did academic goals for math.

Contrary to expectations, a strong identification with task goals, performance-approach goals, and/or social academic goals (both teacher and friends-related) was not associated with higher scores on standardized reading and math achievement tests. Although previous researchers (see Midgley et al., 2001, for discussion) reported inconsistent findings regarding the relationship between performance-approach goals and academic achievement, they consistently found a positive relationship between task goals and academic achievement. However, the students in this study who gave themselves high

ratings on these goals did not necessarily perform better on achievement tests than students who did not give themselves high ratings on these goals. One possible explanation for this finding is that students' scores on nationally standardized achievement tests were used as a measure of academic achievement rather than grade point average, which has been commonly used as a measure of academic achievement in goal theory research. Although a student's grade point average may be vulnerable to grade inflation and the subjective views of the teacher, it can be a more immediate and direct reflection of a student's academic performance in the classroom. In short, although the students in this study with strong task goals, performance-approach goals, and social academic goals (teacher and friends-related) did not necessarily perform better on standardized achievement tests than other students, they may still have been demonstrating greater academic achievement than other students in their daily classwork.

In contrast to other academic goals, (i.e., task goals, performance-approach goals, and teacher and friends-related social academic goals), performance-avoid goals were expected to negatively relate to academic benefits. That is, students with a strong desire to avoid looking incompetent were expected to report a weak use of adaptive learning strategies and low achievement scores. The findings from this study partially supported this expectation. The higher the students' ratings on the performance-avoid scale, the lower their scores on 5th-grade math achievement. However, this association was not found between performance-avoid goals and 5th-grade reading achievement. In addition, performance-avoid goals were positively related to the use of adaptive learning strategies. Although this association was not as strong as the association between task goals and/or

social academic goals (teacher and friends) and the use of adaptive learning strategies, it was similar in strength to the relationship between performance-approach goals and the use of adaptive learning strategies.

These results may follow a pattern similar to the findings of studies conducted by Urdan (1996, 1997b) and Wentzel (1991, 1993). Both researchers found that students with strong performance goals (i.e., both performance-approach and performance-avoid) did not always demonstrate maladaptive academic outcomes if they also rated themselves high on the task goal scale. In the current study, the effects of simultaneously having strong task and strong performance-approach or performance-avoid goals (or strong task, strong performance-approach, and strong performance-avoid goals) were not investigated. However, students' task goals for English were positively related to both their performance-approach goals and their performance-avoid goals for English, suggesting that students with strong task goals likely also had strong performance-approach and performance-avoid goals for English. In contrast, students' task goals and performance-approach and performance-avoid goals for math were not related. Notably, performance-avoid goals for math were negatively related to their 5th-grade math achievement scores. In short, the students in this study may have been demonstrating the effects of having multiple goals for English, resulting in positive outcomes for performance-avoid goals.

Additional findings from this study did not support other expectations, although important information was discovered. For instance, it was expected that students' learning strategies would mediate the relationship between students' academic goals and their achievement. Previous researchers working within a goal theory framework have

typically studied the relationship between students' academic goals and various academic outcomes separately. In other words, the relationship between academic goals and learning strategies has been well researched as has the relationship between academic goals and achievement. However, researchers have rarely investigated the two outcome variables in the same study. Furthermore, the relationship between learning strategies and academic achievement in the context of academic goals has never been examined. In this study, it was believed that the relationship between students' academic goals and their academic achievement would be explained by the relationship between their use of learning strategies and achievement. However, after finding that students' academic goals were unrelated to their achievement scores (i.e., with the exception of performance-avoid goals and 5th-grade math achievement), it was no surprise that students' learning strategies did not mediate the relationship between students' academic goals and their academic achievement in this study.

Similarly, it was expected that students' interest would moderate the relationship between social academic goals (both teacher and friends-related) and academic achievement. However, the results suggested that, in conditions of low interest, students' with strong social goals did not necessarily demonstrate high academic achievement. One possible explanation for this finding is that social academic goals and academic achievement were unrelated in the first place. In order to investigate a specific condition (i.e., low interest) that is believed to moderate the relationship between two variables, it is necessary that the two variables in question have a relationship.

In contrast, students' social academic goals and their use of adaptive learning strategies were positively related. However, interest also did not moderate the relationship between these two variables. In this case, with only two items, the measure used for interest may not have been extensive enough to fully assess the students' interest in each subject domain. Interest researchers distinguish between two types of interest: situational and individual (Hidi, 2000). Situational interest arises from specific conditions and may or may not be fleeting. Conversely, by definition, individual interest is an enduring psychological state or predisposition. In this study, individual interest in English and math was investigated. However, it may be the case that students are motivated by social reasons under very specific low interest conditions (i.e., low situational interest). Conceivably, a student may generally like math but strongly dislike memorizing the multiplication tables and, in such a case, social academic goals may become important sources of motivation.

Theoretical Implications of This Study

The results from this study highlight three important issues for researchers working within the goal theory framework. First, with the addition of this study's findings, a growing body of evidence suggests that boys and girls differ in their academic goals and in the relationships between these goals and academic outcomes. However, gender differences have not been typically investigated in goal theory research. The findings of this study imply that, if researchers do not investigate gender differences, they may compromise the practical significance of their findings. For instance, performance-approach and performance-avoid goals may lead to positive benefits for boys but result in maladaptive outcomes for girls. With this information, teachers can plan their curriculum

and evaluation methods accordingly. In short, the findings from this study indicate that gender is an important variable to include in any goal theory research.

Second, this study lends support to the claims that a two-goal theory (i.e., task goals and performance-approach and performance-avoid goals) does not adequately portray the diversity and complexity of students' reasons for achieving. Wentzel (2000) has contributed to a broadening of our understanding of student motivation by conducting extensive research on students' social motivation. However, her interest has primarily been focused on goals for achieving social competence and/or acquiring positive social characteristics. On the other hand, the findings from this study support Urdan and Maehr's (1995) argument that social reasons for achieving ought to be studied separately from the performance goal category. In this study, the relationship between students' social academic goals (both teacher and friends-related) and the use of adaptive learning strategies was stronger than the relationship between students' performance-approach and performance-avoid goals and the use of adaptive learning strategies, suggesting that the study of social academic goals contributes unique information that would otherwise be lost if researchers did not investigate social reasons for achieving in a separate category.

Third, the finding that performance-avoid goals were positively related to the use of adaptive learning strategies (i.e., rather than negatively related, as expected) suggests support for the idea that, at any one time, students are likely pursuing multiple goals and that the interaction of these goals may result in different affective, cognitive, and behavioral outcomes (Midgley, 2001). Researchers working within the goal theory framework have typically approached academic goals from the perspective that students

are primarily influenced by one dominant goal orientation at a time. For this reason, they have typically only tested for the main effects of individual goals on academic outcomes. The findings of this study support the claim that the interactions of goals should be investigated by future researchers (Midgley, 2001).

Practical Significance of This Study

The findings of this study suggest to educators that relationships (i.e., teacher-student, student-student) in the classroom ought to be considered when designing instructional strategies. With a growing emphasis on accountability, many teachers often report feeling pressured to focus most of their energies on academic issues in order to meet certain standards such as preparing their students to take standardized achievement tests. As a result, students' social concerns are often viewed, at best, as secondary to their academic endeavors and, at worst, an interference to their academic progress. However, the findings of this study suggest that students have social reasons for achieving that can lead to academic benefits such as the use of adaptive learning strategies. When teachers are confronted with students who demonstrate particularly low motivation, they may find it helpful to draw upon these social sources of motivation. For instance, a teacher might consider giving individual attention to a student with particularly strong teacher-related social academic goals. This attention can take the form of additional time spent with the student, ensuring that expectations are explicit and clear, or designing special reinforcers (e.g., teacher's helper for the day). Similarly, instructional strategies can be tailored to the needs of students with strong friends-related social academic goals. It is important to note that many teachers already take their students' relationships into consideration when

designing and implementing curriculum. The findings of this study provide validation for their efforts and suggest to other teachers and educators that they also consider this important source of motivation, despite pressure to focus on other concerns.

Limitations of This Study and Future Directions

As with any research, the findings of this study should be considered in the context of certain methodological limitations. To begin with, the significant findings from this study were correlational in nature. Therefore, it is important to remember that, although relationships between variables were discovered, the causal effect of individual variables on other variables was not investigated. In order to explore causal relationships between the variables, future researchers would need to design an experimental study that would likely involve the induction of goal orientations and the use of performance-based academic measures. Also, this study used a survey to gather information about students' goals and learning strategies. As a self-report measure, all surveys are subject to various kinds of inaccuracies. This study would have been enhanced by the additions of teacher surveys and a qualitative component that included teacher and student interviews as well as observations over a period of time. Future research to examine the effect of the timing of the surveys on student responses is also needed. For instance, students responses to the surveys may have been different if the surveys had been administered earlier in the year when they are preparing for the FCAT.

Other measurement issues involving individual variables also limited the generalizability of the findings. For instance, a more extensive measure of interest (i.e., one that included additional items designed to measure situational interest) may have led to different findings

and would be an improvement in future research designed to examine similar questions. Also, the use of standardized achievement scores as a measure of academic achievement led to unexpected findings. As previously noted, most researchers working within a goal theory framework have used grade point average as a measure of academic achievement. In order to explain why the findings of the current study did not consistently replicate previous findings (i.e., regarding achievement), it would be necessary to include both grade point average and standardized achievement scores in future research in order to compare their corresponding relationships with academic goals and learning strategies.

Finally, the findings of this study are based on an overwhelmingly white, rural and suburban sample of 5th-graders. With a more ethnically diversified sample, it would have been possible to investigate the possibility of ethnic differences. Over the course of this study, several African-American educators commented to me that, by their observations, young African-American children seem more motivated by teacher-related social academic goals than by any other type of academic goal (i.e., more so than task goals, performance goals). An investigation of these observations would provide valuable information for educators and further efforts to expand goal theory.

In conclusion, the findings of this study did not support the expectation that social academic goals would be an important source of motivation for students in conditions of low interest nor did the results indicate that students' use of learning strategies mediates the relationship between their academic goals (i.e., task, performance-approach, performance-avoid, and teacher and friends-related social academic goals) and their achievement. However, the results of this study contributed other valuable information.

Among these findings, gender differences in academic orientations, the importance of studying social academic goals as a separate category, and the potential academic benefits of multiple goals have particularly significant practical and theoretical implications.

APPENDIX A CONSENT FORM

Dear Parent or Guardian:

Hello! My name is Melanie Watson and I am a graduate student in school psychology at the University of Florida under the supervision of Dr. Patricia Ashton and Dr. John Kranzler. I am conducting research on the achievement motivation of fifth-grade students. The purpose of this study is to investigate the relationship between fifth-graders' interest, academic goals, and learning strategies. I would like to invite your child to participate. In this study, each child will complete a survey. The survey requires each participant to rank their degree of agreement with a series of statements on a scale of 1 to 7. Your child does not have to answer any question he or she does not wish to answer. The survey will be administered at your child's school during regular school hours by a trained graduate student in school psychology. In order to get a measure of academic achievement, I would also like your permission to access your child's school records, including his or her scores on the Terra Nova or FCAT for the current and past years.

Please be assured that this study involves no known risks or discomforts of any kind. There are no direct benefits. Each participant will receive a coupon from a local fast food restaurant as compensation upon completion of the survey. The survey is not part of the school curriculum and takes around twenty minutes to complete. If you and your child choose to participate, your child may miss 20 minutes of class time. He or she will be

allowed to make up any missed work. Your child's principal and teacher agreed to allow your child to participate with your consent. If you and your child choose not to participate, your child will continue with his or her regularly scheduled classwork during the survey administration. Furthermore, your child's participation or non-participation in the study will not affect his or her grades or treatment in school. You and your child are free to withdraw permission or participation in the study at any time. In addition, all results of this study as well as any information that you provide will be kept confidential to the extent provided by the law. Your child will receive a code number so that his or her name will not appear on the results. If you have any questions, please feel free to contact me at (850) 402-1679 or my faculty supervisor, Dr. Pat Ashton, at (352) 392-0723.

Questions or concerns about research participants' rights can be directed to the UFIRB office, PO Box 112250, University of Florida, Gainesville, FL 32611-2250.

Sincerely,

Melanie Watson

Graduate Student in School Psychology

I have read the procedure described above. I voluntarily agree to allow my child, _____ to participate in Melanie Watson's study on fifth-graders' achievement motivation and I have received a copy of this description.

Parent/Guardian Signature _____ Date _____

2nd Parent/Witness Signature _____ Date _____

APPENDIX B CHILD ASSENT SCRIPT

Hi! My name is Melanie Watson and I am a graduate student in school psychology at the University of Florida. I would like to invite you to take part in my research project about motivation and learning in school. If you decide to participate, you will be asked to fill out a questionnaire that takes around twenty minutes to complete. With you and your parent's/parents' permission, I will also look at your school records, including your scores on the Terra Nova or FCAT for this year and last year. Your decision to take part in this study will not affect your grades or how you are treated at school in any way. Also, you do not have to answer any question that you do not want to answer and you can stop at anytime for whatever reason. I will give you a code number so that only you and I will see your answers. After you finish the whole survey, I will give you a coupon that you can use at a local fast food restaurant as a treat for helping me. Do you have any questions? Would you like to participate?

APPENDIX C
ENGLISH SURVEY

HERE ARE SOME QUESTIONS ABOUT YOURSELF AS A STUDENT IN THIS CLASS. PLEASE FILL IN THE CIRCLE ABOVE THE NUMBER ON THE SCAN FORM THAT BEST DESCRIBES WHAT YOU THINK. PLEASE MAKE SURE THAT THE CIRCLE IS COMPLETELY FILLED IN AND LEAVE NO STRAY MARKS ON THE FORM.

1) In general, I find working on English assignments:

1	2	3	4	5	6	7
VERY BORING			IT'S OKAY		VERY INTERESTING	

2) How much do you like English?

1	2	3	4	5	6	7
A LITTLE			IT'S OKAY		A LOT	

3) I want to do better than other students in my English class.

1	2	3	4	5	6	7
NOT AT ALL TRUE OF ME			SOMEWHAT TRUE		VERY TRUE OF ME	

4) An important reason I do my English work is so I don't embarrass myself.

1	2	3	4	5	6	7
NOT AT ALL TRUE OF ME			SOMEWHAT TRUE		VERY TRUE OF ME	

5) I like English work that I'll learn from even if I make a lot of mistakes.

1 2 3 4 5 6 7

NOT AT ALL TRUE OF ME SOMEWHAT TRUE VERY TRUE OF ME

6) It's important to me for my teacher to be happy with my work.

1 2 3 4 5 6 7

NOT AT ALL TRUE OF ME SOMEWHAT TRUE VERY TRUE OF ME

7) When I do my English work, I try to think about how it connects with something in everyday life.

1 2 3 4 5 6 7

NOT AT ALL TRUE OF ME SOMEWHAT TRUE VERY TRUE OF ME

8) I want to do well in English so my friends will be proud of me.

1 2 3 4 5 6 7

NOT AT ALL TRUE OF ME SOMEWHAT TRUE VERY TRUE OF ME

9) When I do my English, I sometimes skip the hard parts.

1 2 3 4 5 6 7

NOT AT ALL TRUE OF ME SOMEWHAT TRUE VERY TRUE OF ME

10) An important reason why I do my English work is because I like to learn new things.

1 2 3 4 5 6 7

NOT AT ALL TRUE OF ME SOMEWHAT TRUE VERY TRUE OF ME

11) I would feel successful if my teacher was pleased with my work.

1 2 3 4 5 6 7

NOT AT ALL TRUE OF ME SOMEWHAT TRUE VERY TRUE OF ME

12) After I write something for the first time in English, I keep working on it to make it better.

1	2	3	4	5	6	7
NOT AT ALL TRUE OF ME			SOMEWHAT TRUE		VERY TRUE OF ME	

13) I'd like to show that I'm smarter than other kids in my English class.

1	2	3	4	5	6	7
NOT AT ALL TRUE OF ME			SOMEWHAT TRUE		VERY TRUE OF ME	

14) I only figure out why I got something wrong in English when the teacher makes me do it.

1	2	3	4	5	6	7
NOT AT ALL TRUE OF ME			SOMEWHAT TRUE		VERY TRUE OF ME	

15) It's very important to me that I don't look stupid in English class.

1	2	3	4	5	6	7
NOT AT ALL TRUE OF ME			SOMEWHAT TRUE		VERY TRUE OF ME	

16) One of my main goals is to do well because it makes my friends happy.

1	2	3	4	5	6	7
NOT AT ALL TRUE OF ME			SOMEWHAT TRUE		VERY TRUE OF ME	

17) I like English work best when it really makes me think.

1	2	3	4	5	6	7
NOT AT ALL TRUE OF ME			SOMEWHAT TRUE		VERY TRUE OF ME	

18) An important reason why I do my English work in school is because I want to make a good impression on my teacher.

1	2	3	4	5	6	7
NOT AT ALL TRUE OF ME			SOMEWHAT TRUE		VERY TRUE OF ME	

19) In English, I spend some time thinking about how to do my work before I start it.

1	2	3	4	5	6	7
NOT AT ALL TRUE OF ME			SOMEWHAT TRUE		VERY TRUE OF ME	

20) I would feel successful if I did better than most other students in my English class.

1	2	3	4	5	6	7
NOT AT ALL TRUE OF ME			SOMEWHAT TRUE		VERY TRUE OF ME	

21) When I don't understand my work in English, I give up and do something else.

1	2	3	4	5	6	7
NOT AT ALL TRUE OF ME			SOMEWHAT TRUE		VERY TRUE OF ME	

22) It's important to me for my friends to be happy with my work.

1	2	3	4	5	6	7
NOT AT ALL TRUE OF ME			SOMEWHAT TRUE		VERY TRUE OF ME	

23) One of my main goals is to avoid looking like I can't do my English work.

1	2	3	4	5	6	7
NOT AT ALL TRUE OF ME			SOMEWHAT TRUE		VERY TRUE OF ME	

24) I would feel successful in English if I learn something new.

1	2	3	4	5	6	7
NOT AT ALL TRUE OF ME			SOMEWHAT TRUE		VERY TRUE OF ME	

25) I ask myself questions when I read my English, to make sure I understand.

1 2 3 4 5 6 7

NOT AT ALL TRUE OF ME SOMEWHAT TRUE VERY TRUE OF ME

26) One of my main goals is to do well because it makes my teacher happy.

1 2 3 4 5 6 7

NOT AT ALL TRUE OF ME SOMEWHAT TRUE VERY TRUE OF ME

27) When the work in English is difficult, I just do what is easy.

1 2 3 4 5 6 7

NOT AT ALL TRUE OF ME SOMEWHAT TRUE VERY TRUE OF ME

28) Doing better than other students in English is important to me.

1 2 3 4 5 6 7

NOT AT ALL TRUE OF ME SOMEWHAT TRUE VERY TRUE OF ME

29) I would feel successful if my friends were pleased with my work.

1 2 3 4 5 6 7

NOT AT ALL TRUE OF ME SOMEWHAT TRUE VERY TRUE OF ME

30) One reason I would not participate in English class is to avoid looking stupid.

1 2 3 4 5 6 7

NOT AT ALL TRUE OF ME SOMEWHAT TRUE VERY TRUE OF ME

31) An important reason why I do my English work in school is because I want to get better at it.

1 2 3 4 5 6 7

NOT AT ALL TRUE OF ME SOMEWHAT TRUE VERY TRUE OF ME

32) The reason I do my English work is so others don't think I'm dumb.

1 2 3 4 5 6 7

NOT AT ALL TRUE OF ME SOMEWHAT TRUE VERY TRUE OF ME

33) I try to connect new work in English to what I've learned before.

1 2 3 4 5 6 7

NOT AT ALL TRUE OF ME SOMEWHAT TRUE VERY TRUE OF ME

34) I would feel really good if I were the only one who could answer all the questions in English class.

1 2 3 4 5 6 7

NOT AT ALL TRUE OF ME SOMEWHAT TRUE VERY TRUE OF ME

35) The reason I do my English work is so it won't look like I know less than others.

1 2 3 4 5 6 7

NOT AT ALL TRUE OF ME SOMEWHAT TRUE VERY TRUE OF ME

36) I want to do well in English so my teacher will be proud of me.

1 2 3 4 5 6 7

NOT AT ALL TRUE OF ME SOMEWHAT TRUE VERY TRUE OF ME

37) An important reason why I do my English work in school is because I want to make a good impression on my friends.

1 2 3 4 5 6 7

NOT AT ALL TRUE OF ME SOMEWHAT TRUE VERY TRUE OF ME

APPENDIX D
MATH SURVEY

HERE ARE SOME QUESTIONS ABOUT YOURSELF AS A STUDENT IN THIS CLASS. PLEASE FILL IN THE CIRCLE ABOVE THE NUMBER ON THE SCAN FORM THAT BEST DESCRIBES WHAT YOU THINK. PLEASE MAKE SURE THAT THE CIRCLE IS COMPLETELY FILLED IN AND LEAVE NO STRAY MARKS ON THE FORM.

1) In general, I find working on math assignments:

1	2	3	4	5	6	7
VERY BORING			IT'S OKAY	VERY INTERESTING		

2) How much do you like math?

1	2	3	4	5	6	7
A LITTLE			IT'S OKAY	A LOT		

3) I want to do better than other students in my math class.

1	2	3	4	5	6	7
NOT AT ALL TRUE OF ME			SOMEWHAT TRUE	VERY TRUE OF ME		

4) An important reason I do my math work is so I don't embarrass myself.

1	2	3	4	5	6	7
NOT AT ALL TRUE OF ME			SOMEWHAT TRUE	VERY TRUE OF ME		

5) I like math work that I'll learn from even if I make a lot of mistakes.

1	2	3	4	5	6	7
NOT AT ALL TRUE OF ME			SOMEWHAT TRUE		VERY TRUE OF ME	

6) It's important to me for my teacher to be happy with my work.

1	2	3	4	5	6	7
NOT AT ALL TRUE OF ME			SOMEWHAT TRUE		VERY TRUE OF ME	

7) When working on a math problem, I try to think about how it connects with something in everyday life.

1	2	3	4	5	6	7
NOT AT ALL TRUE OF ME			SOMEWHAT TRUE		VERY TRUE OF ME	

8) I want to do well in math so my friends will be proud of me.

1	2	3	4	5	6	7
NOT AT ALL TRUE OF ME			SOMEWHAT TRUE		VERY TRUE OF ME	

9) When I do my math, I sometimes skip the hard parts.

1	2	3	4	5	6	7
NOT AT ALL TRUE OF ME			SOMEWHAT TRUE		VERY TRUE OF ME	

10) An important reason why I do my math work is because I like to learn new things.

1	2	3	4	5	6	7
NOT AT ALL TRUE OF ME			SOMEWHAT TRUE		VERY TRUE OF ME	

11) I would feel successful if my teacher was pleased with my work.

1	2	3	4	5	6	7
NOT AT ALL TRUE OF ME			SOMEWHAT TRUE		VERY TRUE OF ME	

12) If I can't solve a problem one way in math, I try to figure out a different way.

1	2	3	4	5	6	7
NOT AT ALL TRUE OF ME			SOMEWHAT TRUE		VERY TRUE OF ME	

13) I'd like to show that I'm smarter than other kids in my math class.

1	2	3	4	5	6	7
NOT AT ALL TRUE OF ME			SOMEWHAT TRUE		VERY TRUE OF ME	

14) I only figure out why I got something wrong in math when the teacher makes me do it.

1	2	3	4	5	6	7
NOT AT ALL TRUE OF ME			SOMEWHAT TRUE		VERY TRUE OF ME	

15) It's very important to me that I don't look stupid in math class.

1	2	3	4	5	6	7
NOT AT ALL TRUE OF ME			SOMEWHAT TRUE		VERY TRUE OF ME	

16) One of my main goals is to do well because it makes my friends happy.

1	2	3	4	5	6	7
NOT AT ALL TRUE OF ME			SOMEWHAT TRUE		VERY TRUE OF ME	

17) I like math work best when it really makes me think.

1	2	3	4	5	6	7
NOT AT ALL TRUE OF ME			SOMEWHAT TRUE		VERY TRUE OF ME	

18) An important reason why I do my math work in school is because I want to make a good impression on my teacher.

1	2	3	4	5	6	7
NOT AT ALL TRUE OF ME			SOMEWHAT TRUE		VERY TRUE OF ME	

19) In math, I spend some time thinking about how to do my work before I start it.

1	2	3	4	5	6	7
NOT AT ALL TRUE OF ME			SOMEWHAT TRUE		VERY TRUE OF ME	

20) I would feel successful if I did better than most other students in my math class.

1	2	3	4	5	6	7
NOT AT ALL TRUE OF ME			SOMEWHAT TRUE		VERY TRUE OF ME	

21) When I don't understand my work in math, I give up and do something else.

1	2	3	4	5	6	7
NOT AT ALL TRUE OF ME			SOMEWHAT TRUE		VERY TRUE OF ME	

22) It's important to me for my friends to be happy with my work.

1	2	3	4	5	6	7
NOT AT ALL TRUE OF ME			SOMEWHAT TRUE		VERY TRUE OF ME	

23) One of my main goals is to avoid looking like I can't do my math work.

1	2	3	4	5	6	7
NOT AT ALL TRUE OF ME			SOMEWHAT TRUE		VERY TRUE OF ME	

24) I would feel successful in math if I learn something new.

1	2	3	4	5	6	7
NOT AT ALL TRUE OF ME			SOMEWHAT TRUE		VERY TRUE OF ME	

25) I ask myself questions when I work on my math, to make sure I understand.

1	2	3	4	5	6	7
NOT AT ALL TRUE OF ME			SOMEWHAT TRUE		VERY TRUE OF ME	

26) One of my main goals is to do well because it makes my teacher happy.

1	2	3	4	5	6	7
NOT AT ALL TRUE OF ME			SOMEWHAT TRUE		VERY TRUE OF ME	

27) When the work in math is difficult, I just do what is easy.

1	2	3	4	5	6	7
NOT AT ALL TRUE OF ME			SOMEWHAT TRUE		VERY TRUE OF ME	

28) Doing better than other students in math is important to me.

1	2	3	4	5	6	7
NOT AT ALL TRUE OF ME			SOMEWHAT TRUE		VERY TRUE OF ME	

29) I would feel successful if my friends were pleased with my work.

1	2	3	4	5	6	7
NOT AT ALL TRUE OF ME			SOMEWHAT TRUE		VERY TRUE OF ME	

30) One reason I would not participate in math class is to avoid looking stupid.

1	2	3	4	5	6	7
NOT AT ALL TRUE OF ME			SOMEWHAT TRUE		VERY TRUE OF ME	

31) An important reason why I do my math work in school is because I want to get better at it.

1	2	3	4	5	6	7
NOT AT ALL TRUE OF ME			SOMEWHAT TRUE		VERY TRUE OF ME	

32) The reason I do my math work is so others don't think I'm dumb.

1	2	3	4	5	6	7
NOT AT ALL TRUE OF ME			SOMEWHAT TRUE		VERY TRUE OF ME	

33) I try to connect new work in math to what I've learned before.

1	2	3	4	5	6	7
NOT AT ALL TRUE OF ME			SOMEWHAT TRUE		VERY TRUE OF ME	

34) I would feel really good if I were the only one who could answer all the questions in math class.

1	2	3	4	5	6	7
NOT AT ALL TRUE OF ME			SOMEWHAT TRUE		VERY TRUE OF ME	

35) The reason I do my math work is so it won't look like I know less than others.

1	2	3	4	5	6	7
NOT AT ALL TRUE OF ME			SOMEWHAT TRUE		VERY TRUE OF ME	

36) I want to do well in math so my teacher will be proud of me.

1	2	3	4	5	6	7
NOT AT ALL TRUE OF ME			SOMEWHAT TRUE		VERY TRUE OF ME	

37) An important reason why I do my math work in school is because I want to make a good impression on my friends.

1	2	3	4	5	6	7
NOT AT ALL TRUE OF ME			SOMEWHAT TRUE		VERY TRUE OF ME	

APPENDIX E
SOCIAL ACADEMIC GOAL SCALE

Teacher-Related Social Academic Goal Subscale

- 1) I want to do well in English/math so my teacher will be proud of me.
- 2) I would feel successful if my teacher was pleased with my work.
- 3) An important reason why I do my English/math work in school is because I want to make a good impression on my teacher.
- 4) It's important to me for my teacher to be happy with my work.
- 5) One of my main goals is to do well because it makes my teacher happy.

Friends-Related Social Subscale

- 1) I want to do well in English/math so my friends will be proud of me.
- 2) I would feel successful if my friends were pleased with my work.
- 3) An important reason why I do my English/math work in school is because I want to make a good impression on my friends.
- 4) It's important to me for my friends to be happy with my work.
- 5) One of my main goals is to do well because it makes my friends happy.

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BIOGRAPHICAL SKETCH

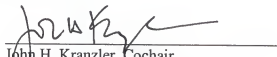
I attended school in Jacksonville, Florida, from kindergarten through the ninth grade. In 1980, I received my high school diploma from the Emma Willard School in Troy, New York. From September 1980 until July 1981, I attended the Benenden School in Kent, England as an English Speaking Union Scholar. I then moved to New York City, where I obtained a Bachelor of Arts in anthropology from Barnard College in the spring of 1985. After working for five years in the anthropology department at the American Museum of Natural History, I felt a longing to work more directly with people and developed an interest in psychology. I attended postbaccalaureate classes in psychology at night. After a return to Florida in the fall of 1990, I worked for three years in an adult psychiatric unit of a large hospital in Jacksonville. From this experience, I developed a specific interest in prevention, children, and education. In the fall of 1993, I began my studies in school psychology at the University of Florida. I completed my doctoral internship at Florida State University Multidisciplinary Center for Evaluation and Consulting and am currently working as a school psychologist for Leon County. I live with my husband and two children in Tallahassee, Florida.

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.



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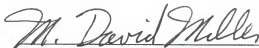
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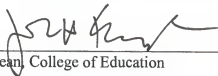
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May, 2002



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